

# Full wwPDB X-ray Structure Validation Report (i)

#### May 22, 2020 – 01:32 pm BST

PDB ID Title		6OIO Crystal structure of MYST acetyltransferase domain in complex with inhibitor 60
Deposited on	:	Hermans, S.J.; Chung, M.C.; Parker, M.W.; Thomas, T.; Baell, J.B. 2019-04-09 1.70 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 following versions of software and data (see references (1)) were used in the production of this report:

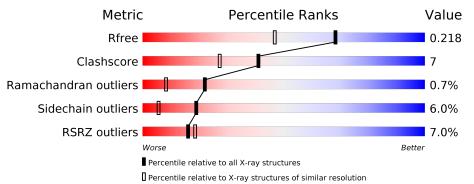
MolProbity		4.02b-467 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)		1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
$\operatorname{Refmac}$	:	5.8.0158
$\operatorname{CCP4}$	:	$7.0.044 (\mathrm{Gargrove})$
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

# 1 Overall quality at a glance (i)

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

The reported resolution of this entry is 1.70 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	$egin{array}{c} { m Whole \ archive} \ (\#{ m Entries}) \end{array}$	${f Similar\ resolution}\ (\#{ m Entries},{ m resolution\ range}({ m \AA}))$
$R_{free}$	130704	4298 (1.70-1.70)
Clashscore	141614	4695 (1.70-1.70)
Ramachandran outliers	138981	4610 (1.70-1.70)
Sidechain outliers	138945	4610 (1.70-1.70)
RSRZ outliers	127900	4222 (1.70-1.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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						
			7%						
1	A	273	82%	14%	•				



# 2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 2443 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.

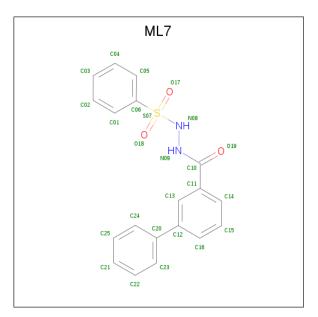
• Molecule 1 is a protein called Histone acetyltransferase KAT8.

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace		
1	Λ	273	Total	С	Ν	Ο	$\mathbf{S}$	0	8	0
			2312	1509	380	411	12	0		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	579	HIS	TYR	$\operatorname{conflict}$	UNP Q9H7Z6
A	645	SER	ALA	engineered mutation	UNP Q9H7Z6
A	648	MET	LEU	engineered mutation	UNP Q9H7Z6
А	649	ILE	THR	engineered mutation	UNP Q9H7Z6
A	660	ARG	LYS	engineered mutation	UNP Q9H7Z6
А	702	ASN	ILE	$\operatorname{conflict}$	UNP Q9H7Z6

• Molecule 2 is N'-(phenylsulfonyl)[1,1'-biphenyl]-3-carbohydrazide (three-letter code: ML7) (formula: C<sub>19</sub>H<sub>16</sub>N<sub>2</sub>O<sub>3</sub>S).





Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
2	А	1	Total 25	C 19	N 2	0 3	S 1	0	0

• Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	А	1	Total Zn 1 1	0	0

• Molecule 4 is water.

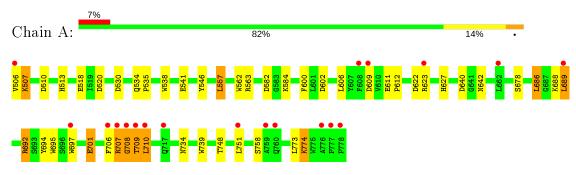
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	105	Total O 105 105	0	0



# 3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Histone acetyltransferase KAT8





# 4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants	46.48Å 56.82Å 122.11Å	Depositor
a, b, c, $\alpha$ , $\beta$ , $\gamma$	$90.00^{\circ}$ $90.00^{\circ}$ $90.00^{\circ}$	Depositor
Resolution (Å)	122.11 - 1.70	Depositor
Resolution (A)	28.41 - 1.70	EDS
% Data completeness	$99.5\ (122.11-1.70)$	Depositor
(in resolution range)	99.6(28.41-1.70)	EDS
R <sub>merge</sub>	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$< I/\sigma(I) > 1$	$3.06 (at 1.70 \text{\AA})$	Xtriage
Refinement program	REFMAC 5.6.0117	Depositor
$R, R_{free}$	0.193 , $0.221$	Depositor
$\Pi, \Pi_{free}$	0.191 , $0.218$	DCC
$R_{free}$ test set	1815 reflections $(5.01\%)$	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	18.1	Xtriage
Anisotropy	0.150	Xtriage
Bulk solvent $k_{sol}(e/Å^3), B_{sol}(Å^2)$	0.36 , $46.9$	EDS
L-test for twinning <sup>2</sup>	$ \langle L  \rangle = 0.48, \langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	2443	wwPDB-VP
Average B, all atoms $(Å^2)$	22.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 6.06% of the height of the origin peak. No significant pseudotranslation is detected.

<sup>&</sup>lt;sup>2</sup>Theoretical 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.



<sup>&</sup>lt;sup>1</sup>Intensities estimated from amplitudes.

# 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, ML7, ALY  $\,$ 

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	Bo	nd lengths	Bond angles		
	Chain	RMSZ	# Z  > 5	RMSZ	# Z  > 5	
1	А	1.24	6/2394~(0.3%)	1.20	11/3242~(0.3%)	

All (6) bond length outliers are listed below:

Mol	Chain	$\mathbf{Res}$	Type	Atoms	Z	$\operatorname{Observed}(\operatorname{\AA})$	Ideal(Å)
1	А	562	TRP	CD2-CE2	6.12	1.48	1.41
1	А	695	TRP	CD2-CE2	5.96	1.48	1.41
1	А	739	TRP	CD2-CE2	5.67	1.48	1.41
1	А	538	TRP	CG-CD1	5.42	1.44	1.36
1	А	600	PHE	CG-CD1	5.34	1.46	1.38
1	А	538	TRP	CD2-CE2	5.00	1.47	1.41

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^{o})$	$Ideal(^{o})$
1	А	557	LEU	CB-CG-CD1	9.20	126.64	111.00
1	А	520	ASP	CB-CG-OD1	6.60	124.24	118.30
1	А	563	ARG	NE-CZ-NH2	-6.51	117.04	120.30
1	А	689	LEU	CA-CB-CG	6.12	129.38	115.30
1	А	582	ASP	CB-CG-OD1	5.84	123.55	118.30
1	А	602	ASP	CB-CG-OD1	5.82	123.54	118.30
1	А	774	LYS	CD-CE-NZ	-5.66	98.69	111.70
1	А	546	TYR	CG-CD2-CE2	-5.25	117.10	121.30
1	А	694	TYR	CZ-CE2-CD2	-5.20	115.12	119.80
1	А	692[A]	ARG	NE-CZ-NH1	5.08	122.84	120.30
1	А	692[B]	ARG	NE-CZ-NH1	5.08	122.84	120.30

All (11) bond angle outliers are listed below:

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	А	2312	0	2298	33	0
2	А	25	0	0	1	0
3	А	1	0	0	0	0
4	А	105	0	0	1	0
All	All	2443	0	2298	33	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 7.

All (33) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

A 4 1	A 4 5 55 D	Interatomic	Clash
Atom-1	Atom-2	distance $(\text{\AA})$	overlap (Å)
1:A:697[B]:TRP:NE1	1:A:701[B]:GLU:CD	1.74	1.39
1:A:697[B]:TRP:HE1	1:A:701[B]:GLU:CD	1.26	1.32
1:A:697[B]:TRP:CZ2	1:A:701[B]:GLU:OE1	1.97	1.18
1:A:697[B]:TRP:CE2	1:A:701[B]:GLU:OE1	2.11	1.02
1:A:697[B]:TRP:NE1	1:A:701[B]:GLU:OE2	1.85	1.02
1:A:707:ARG:H	1:A:708:GLY:HA3	1.31	0.94
1:A:506:VAL:HG21	1:A:535:PRO:HA	1.47	0.94
1:A:697[B]:TRP:CE2	1:A:701[B]:GLU:CD	2.42	0.92
1:A:541:GLU:OE1	1:A:627:HIS:HD2	1.69	0.75
1:A:697[B]:TRP:HZ2	1:A:701[B]:GLU:OE1	1.67	0.74
1:A:622:ASP:OD1	1:A:627:HIS:HE1	1.72	0.72
1:A:707:ARG:N	1:A:708:GLY:HA3	2.04	0.69
1:A:697[B]:TRP:NE1	1:A:701[B]:GLU:CG	2.58	0.66
1:A:606:LEU:HD21	1:A:609:ASP:HB3	1.84	0.59
1:A:748:THR:HG23	1:A:751:LEU:H	1.68	0.58
1:A:697[B]:TRP:CD1	1:A:701[B]:GLU:HG3	2.40	0.57
1:A:706:PHE:HB2	1:A:710:LEU:HD22	1.89	0.55
1:A:686:LEU:HD13	2:A:801:ML7:C13	2.42	0.50
1:A:506:VAL:HG11	1:A:534:GLN:O	2.13	0.49
1:A:611:GLU:CD	1:A:611:GLU:H	2.16	0.49
1:A:611:GLU:HG2	1:A:612:PRO:HD3	1.94	0.48
1:A:688:LYS:O	1:A:692[B]:ARG:HG3	2.13	0.48
1:A:611:GLU:N	1:A:612:PRO:CD	2.77	0.47

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Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:510:ASP:OD1	2.15	0.47
1:A:507:LYS:HG2	2.16	0.46
1:A:678:SER:O	2.16	0.46
1:A:609:ASP:HB3	2.46	0.46
1:A:751:LEU:HD12	1.81	0.45

2.46

1.87

3.02

2.20

2.03

0.45

0.43

0.42

0.41

0.41

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Atom-1

1:A:506:VAL:HG13

1:A:507:LYS:O

1:A:642:ASN:HA

1:A:606:LEU:CD2

1:A:751:LEU:HA

1:A:748:THR:CG2

1:A:584:LYS:HB2

1:A:697[B]:TRP:CD1

1:A:534:GLN:HB2

1:A:513:HIS:HD2

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	А	278/273~(102%)	267~(96%)	9(3%)	2(1%)	22 8

1:A:751:LEU:HB2

1:A:584:LYS:HE3

1:A:701[B]:GLU:CG

4:A:935:HOH:O

1:A:518:GLU:OE2

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	А	709	THR
1	А	708	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	259/252~(103%)	241~(93%)	18 (7%)	15 4		

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	А	507	LYS
1	А	530[A]	ASP
1	А	530[B]	ASP
1	А	557	LEU
1	А	623	ARG
1	А	640	ASP
1	А	686	LEU
1	А	689	LEU
1	А	701[A]	GLU
1	А	701[B]	GLU
1	А	707	ARG
1	А	709	THR
1	А	710	LEU
1	А	734	ASN
1	А	758[A]	SER
1	А	758[B]	SER
1	А	773	LEU
1	А	774	LYS

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

Mol	Chain	Res	Type
1	А	513	HIS
1	А	516	ASN
1	А	586	HIS
1	А	627	HIS
1	А	702	ASN
1	А	734	ASN
1	А	760	GLN

#### 5.3.3 RNA (i)

There are no RNA molecules in this entry.



#### 5.4 Non-standard residues in protein, DNA, RNA chains (i)

1 non-standard protein/DNA/RNA residue is 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	Bo	$\mathbf{ths}$	B	ond ang	gles	
	Type	Unam	nes		Counts	RMSZ	# Z  > 2	Counts	RMSZ	#  Z  > 2
1	ALY	А	604	1	10, 11, 12	0.98	0	7,12,14	2.12	2 (28%)

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.

N	Mol	Type	Chain	$\mathbf{Res}$	Link	Chirals	Torsions	Rings
	1	ALY	А	604	1	-	1/9/10/12	-

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^{o})$	$Ideal(^{o})$
1	А	604	ALY	CE-NZ-CH	-4.14	116.19	122.56
1	А	604	ALY	CD-CG-CB	-2.49	104.82	113.62

There are no chirality outliers.

All (1) torsion outliers are listed below:

I	Mol	Chain	Res	Type	Atoms
	1	А	604	ALY	CG-CD-CE-NZ

There are no ring outliers.

No monomer is involved in short contacts.

#### 5.5 Carbohydrates (i)

There are no carbohydrates in this entry.



### 5.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 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).

Mo	l Type	Chain	Chain	Res	Link	B	ond leng	gths	B	ond ang	gles
	I Iype		nes		Counts	RMSZ	# Z >2	Counts	RMSZ	# Z  > 2	
2	ML7	A	801	-	27,27,27	<b>5.15</b>	10 (37%)	37,37,37	2.45	13 (35%)	

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
2	ML7	А	801	-	-	1/20/20/20	0/3/3/3

All (10) bond length outliers are listed below:

Mol	Chain	$\mathbf{Res}$	Type	Atoms	Z	$\operatorname{Observed}(\operatorname{\AA})$	Ideal(Å)
2	А	801	ML7	N08-N09	19.86	1.55	1.40
2	А	801	ML7	S07-N08	11.10	1.80	1.65
2	А	801	ML7	O18-S07	9.41	1.54	1.43
2	А	801	ML7	C06-S07	5.57	1.85	1.76
2	А	801	ML7	C11-C10	-5.01	1.39	1.50
2	А	801	ML7	C14-C11	2.62	1.43	1.39
2	А	801	ML7	C20-C12	-2.49	1.42	1.49
2	А	801	ML7	C16-C12	2.39	1.44	1.39
2	А	801	ML7	C22-C23	2.23	1.43	1.38
2	А	801	ML7	C22-C21	2.16	1.43	1.38

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$Observed(^{o})$	$Ideal(^{o})$
2	А	801	ML7	O18-S07-C06	-5.93	100.66	107.97
2	А	801	ML7	C05-C06-S07	-5.88	113.37	119.77
2	А	801	ML7	O18-S07-N08	5.40	115.89	105.57
2	А	801	ML7	O18-S07-O17	-5.20	113.16	119.55

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Mol	Chain	Res	Type	Atoms	Z	$Observed(^{o})$	$Ideal(^{o})$
2	А	801	ML7	C05-C06-C01	4.70	127.01	120.44
2	А	801	ML7	O17-S07-N08	3.30	111.89	105.57
2	А	801	ML7	C21-C25-C24	2.92	124.63	120.19
2	А	801	ML7	C25-C21-C22	-2.69	114.93	119.93
2	А	801	ML7	C04-C05-C06	-2.62	116.23	118.95
2	А	801	ML7	C02-C01-C06	-2.59	116.26	118.95
2	А	801	ML7	C15-C14-C11	-2.52	117.36	120.34
2	А	801	ML7	C14-C11-C13	2.50	122.20	119.24
2	А	801	ML7	C22-C23-C20	2.31	123.46	120.56

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There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	А	801	ML7	N09-C10-C11-C13

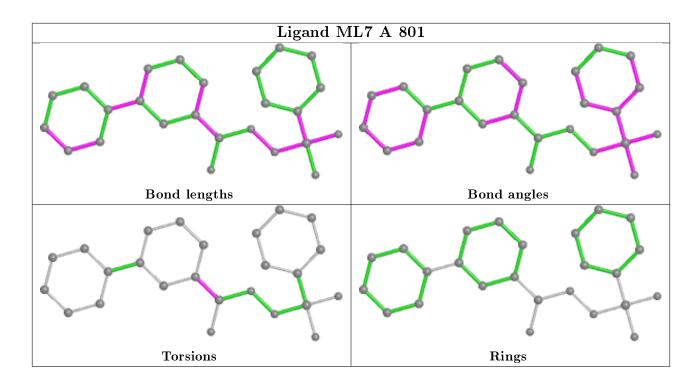
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	$\mathbf{Res}$	Type	Clashes	Symm-Clashes
2	А	801	ML7	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.





## 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,  $95^{th}$  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	< <b>RSRZ</b> >	#RSRZ>2		$\mathbf{OWAB}(\mathbf{A}^2)$	Q<0.9
1	А	272/273~(99%)	0.34	19 (6%) 16 18	8	9,20,46,90	0

All (19) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	А	709	THR	7.4
1	А	506	VAL	7.2
1	А	707	ARG	6.9
1	А	706	PHE	5.8
1	А	759	ALA	5.0
1	А	778	PRO	4.3
1	А	777	PRO	3.5
1	А	609	ASP	3.3
1	А	623	ARG	3.1
1	А	776	ALA	3.1
1	А	760	GLN	3.0
1	А	751	LEU	2.7
1	А	608	PHE	2.6
1	А	708	GLY	2.5
1	А	710	LEU	2.4
1	А	697[A]	TRP	2.3
1	А	717	GLN	2.3
1	А	689	LEU	2.2
1	А	662	LEU	2.0

### 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. The B-factors column lists the minimum, median,  $95^{th}$  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	$\mathbf{B} ext{-factors}(\mathbf{A}^2)$	$Q{<}0.9$
1	ALY	А	604	12/13	0.93	0.10	$13,\!15,\!19,\!21$	0

#### 6.3 Carbohydrates (i)

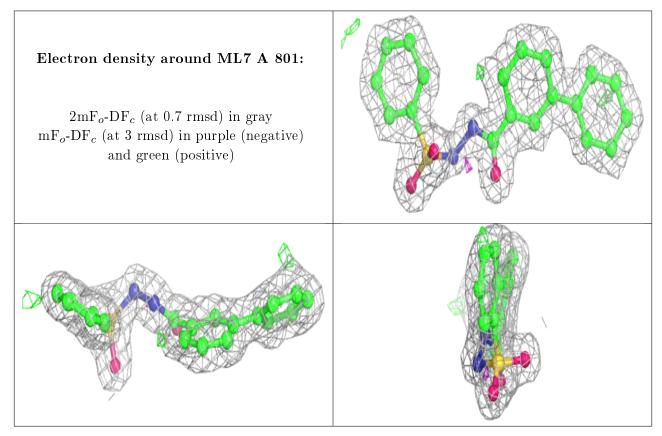
There are no carbohydrates in this entry.

### 6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median,  $95^{th}$  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	$\mathbf{RSR}$	$\mathbf{B} ext{-factors}(\mathbf{\AA}^2)$	$Q{<}0.9$
2	ML7	А	801	25/25	0.95	0.09	$12,\!15,\!18,\!19$	0
3	ZN	А	802	1/1	1.00	0.06	12,12,12,12	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.





## 6.5 Other polymers (i)

There are no such residues in this entry.

