



Full wwPDB X-ray Structure Validation Report ⓘ

May 13, 2020 – 02:26 am BST

PDB ID : 2OX0
Title : Crystal structure of JMJD2A complexed with histone H3 peptide dimethylated at Lys9
Authors : Pilka, E.S.; Ng, S.S.; Kavanagh, K.L.; McDonough, M.A.; Savitsky, P.; von Delft, F.; Arrowsmith, C.H.; Weigelt, J.; Edwards, A.; Sundstrom, M.; Schofield, C.J.; Oppermann, U.; Structural Genomics Consortium (SGC)
Deposited on : 2007-02-19
Resolution : 1.95 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
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) : 2.11

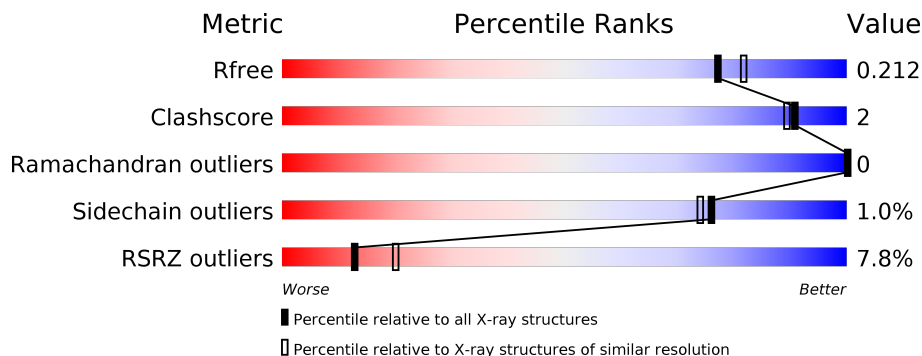
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.95 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	2580 (1.96-1.96)
Clashscore	141614	2705 (1.96-1.96)
Ramachandran outliers	138981	2678 (1.96-1.96)
Sidechain outliers	138945	2678 (1.96-1.96)
RSRZ outliers	127900	2539 (1.96-1.96)

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 $\leq 5\%$. 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	381	 6% 87% 5% 8%
1	B	381	 8% 88% 9%
2	C	8	 88% 13%
2	D	8	 25% 100%

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 6287 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 JmjC domain-containing histone demethylation protein 3A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	349	2804	1820	461	508	15	0	2	0
1	B	348	2844	1844	472	513	15	0	3	0

There are 44 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-21	MET	-	EXPRESSION TAG	UNP O75164
A	-20	HIS	-	EXPRESSION TAG	UNP O75164
A	-19	HIS	-	EXPRESSION TAG	UNP O75164
A	-18	HIS	-	EXPRESSION TAG	UNP O75164
A	-17	HIS	-	EXPRESSION TAG	UNP O75164
A	-16	HIS	-	EXPRESSION TAG	UNP O75164
A	-15	HIS	-	EXPRESSION TAG	UNP O75164
A	-14	SER	-	EXPRESSION TAG	UNP O75164
A	-13	SER	-	EXPRESSION TAG	UNP O75164
A	-12	GLY	-	EXPRESSION TAG	UNP O75164
A	-11	VAL	-	EXPRESSION TAG	UNP O75164
A	-10	ASP	-	EXPRESSION TAG	UNP O75164
A	-9	LEU	-	EXPRESSION TAG	UNP O75164
A	-8	GLY	-	EXPRESSION TAG	UNP O75164
A	-7	THR	-	EXPRESSION TAG	UNP O75164
A	-6	GLU	-	EXPRESSION TAG	UNP O75164
A	-5	ASN	-	EXPRESSION TAG	UNP O75164
A	-4	LEU	-	EXPRESSION TAG	UNP O75164
A	-3	TYR	-	EXPRESSION TAG	UNP O75164
A	-2	PHE	-	EXPRESSION TAG	UNP O75164
A	-1	GLN	-	EXPRESSION TAG	UNP O75164
A	0	SER	-	EXPRESSION TAG	UNP O75164
B	-21	MET	-	EXPRESSION TAG	UNP O75164
B	-20	HIS	-	EXPRESSION TAG	UNP O75164
B	-19	HIS	-	EXPRESSION TAG	UNP O75164

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-18	HIS	-	EXPRESSION TAG	UNP O75164
B	-17	HIS	-	EXPRESSION TAG	UNP O75164
B	-16	HIS	-	EXPRESSION TAG	UNP O75164
B	-15	HIS	-	EXPRESSION TAG	UNP O75164
B	-14	SER	-	EXPRESSION TAG	UNP O75164
B	-13	SER	-	EXPRESSION TAG	UNP O75164
B	-12	GLY	-	EXPRESSION TAG	UNP O75164
B	-11	VAL	-	EXPRESSION TAG	UNP O75164
B	-10	ASP	-	EXPRESSION TAG	UNP O75164
B	-9	LEU	-	EXPRESSION TAG	UNP O75164
B	-8	GLY	-	EXPRESSION TAG	UNP O75164
B	-7	THR	-	EXPRESSION TAG	UNP O75164
B	-6	GLU	-	EXPRESSION TAG	UNP O75164
B	-5	ASN	-	EXPRESSION TAG	UNP O75164
B	-4	LEU	-	EXPRESSION TAG	UNP O75164
B	-3	TYR	-	EXPRESSION TAG	UNP O75164
B	-2	PHE	-	EXPRESSION TAG	UNP O75164
B	-1	GLN	-	EXPRESSION TAG	UNP O75164
B	0	SER	-	EXPRESSION TAG	UNP O75164

- Molecule 2 is a protein called synthetic peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	C	8	Total	C	N	O	0	1	0
			69	43	14	12			
2	D	8	Total	C	N	O	0	0	0
			61	36	13	12			

- Molecule 3 is NICKEL (II) ION (three-letter code: NI) (formula: Ni).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Ni	0	0
			1	1		
3	A	1	Total	Ni	0	0
			1	1		

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

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

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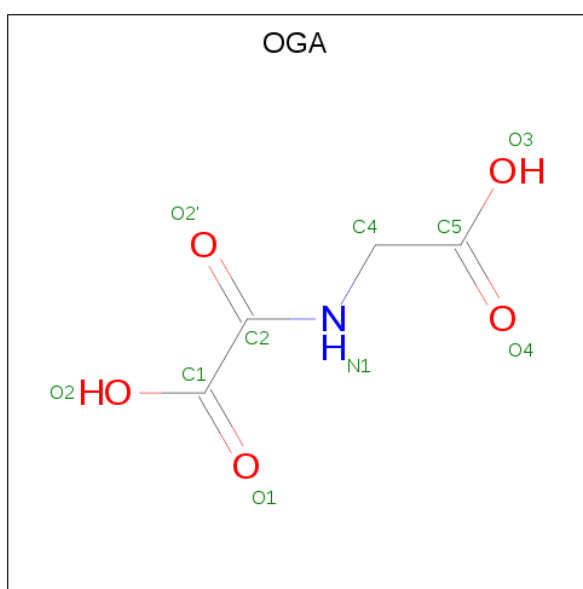
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Zn	0	0
			1	1		

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total	Cl	0	0
			1	1		

- Molecule 6 is N-OXALYLGLYCINE (three-letter code: OGA) (formula: C₄H₅NO₅).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	
6	A	1	Total	C	N	O	0	0
			10	4	1	5		
6	B	1	Total	C	N	O	0	0
			10	4	1	5		

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	220	Total	O	0	0
			220	220		
7	B	245	Total	O	0	0
			245	245		
7	C	8	Total	O	0	1
			9	9		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	D	10	Total	O	0	1
			10	10		

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	101.21Å 150.00Å 57.23Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	41.49 – 1.95 37.91 – 1.95	Depositor EDS
% Data completeness (in resolution range)	99.5 (41.49-1.95) 99.5 (37.91-1.95)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	0.08	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.81 (at 1.95Å)	Xtrriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.169 , 0.210 0.175 , 0.212	Depositor DCC
R_{free} test set	2679 reflections (4.18%)	wwPDB-VP
Wilson B-factor (Å ²)	33.3	Xtrriage
Anisotropy	0.052	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 47.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	6287	wwPDB-VP
Average B, all atoms (Å ²)	36.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.19% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NI, ZN, CL, ALY, MLY, OGA

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	0.47	0/2897	0.56	0/3936
1	B	0.46	0/2937	0.56	0/3983
2	C	0.60	0/37	0.72	0/49
2	D	0.63	0/36	0.67	0/46
All	All	0.47	0/5907	0.56	0/8014

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	2804	0	2653	12	0
1	B	2844	0	2728	6	0
2	C	69	0	80	5	0
2	D	61	0	64	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	A	10	0	3	1	0
6	B	10	0	3	0	0
7	A	220	0	0	3	0
7	B	245	0	0	0	0
7	C	9	0	0	0	0
7	D	10	0	0	0	0
All	All	6287	0	5531	19	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 2.

All (19) 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:A:86:ASN:ND2	7:A:717:HOH:O	2.23	0.70
1:A:163:GLU:HG3	1:A:319:VAL:HG21	1.83	0.59
1:A:288:SER:OG	2:C:9[B]:MLY:HH21	2.07	0.54
1:A:170:GLY:O	2:C:9[A]:MLY:HH13	2.08	0.54
7:A:639:HOH:O	2:C:9[B]:MLY:HH22	2.08	0.53
1:A:186:ALA:HA	1:A:244:LEU:HD23	1.94	0.49
1:A:190:GLU:OE1	2:C:9[B]:MLY:HH13	2.13	0.49
1:B:21:MET:HE1	1:B:53:TRP:HB2	1.96	0.46
1:B:222:LEU:HG	1:B:226:PHE:CE2	2.51	0.45
1:A:185:PHE:CG	6:A:500:OGA:H4C2	2.51	0.44
1:B:222:LEU:HD11	1:B:226:PHE:CZ	2.53	0.44
1:A:177:TYR:OH	2:C:9[B]:MLY:HH23	2.18	0.44
1:A:295:ARG:HD2	7:A:586:HOH:O	2.18	0.44
1:A:322:ARG:HG3	1:A:329:TYR:CE1	2.53	0.42
1:A:179:GLY:O	1:A:283:PHE:HA	2.19	0.42
1:B:186:ALA:HA	1:B:244:LEU:HD23	2.01	0.42
1:B:318[A]:ASP:OD1	1:B:333:LYS:NZ	2.49	0.42
1:B:82:PHE:HB2	1:B:244:LEU:HB2	2.02	0.42
1:A:141:TYR:CE2	1:A:149:ASN:HA	2.56	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	349/381 (92%)	346 (99%)	3 (1%)	0	100	100
1	B	349/381 (92%)	345 (99%)	4 (1%)	0	100	100
2	C	5/8 (62%)	5 (100%)	0	0	100	100
2	D	5/8 (62%)	5 (100%)	0	0	100	100
All	All	708/778 (91%)	701 (99%)	7 (1%)	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	287/335 (86%)	286 (100%)	1 (0%)	92	92
1	B	296/335 (88%)	290 (98%)	6 (2%)	55	48
2	C	3/3 (100%)	3 (100%)	0	100	100
2	D	3/3 (100%)	3 (100%)	0	100	100
All	All	589/676 (87%)	582 (99%)	7 (1%)	76	68

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	259	LYS
1	B	132	TYR

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Mol	Chain	Res	Type
1	B	182	LYS
1	B	259	LYS
1	B	318[A]	ASP
1	B	318[B]	ASP
1	B	322	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

5 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
2	MLY	C	9[B]	-	9,10,11	0.53	0	6,11,13	0.86	0
2	MLY	D	9	2	9,10,11	0.82	0	6,11,13	0.87	0
2	ALY	D	14	2	8,12,12	0.82	0	8,14,14	0.62	0
2	ALY	C	14	2	8,12,12	0.85	0	8,14,14	0.60	0
2	MLY	C	9[A]	-	9,10,11	0.73	0	6,11,13	0.96	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
2	MLY	C	9[B]	-	-	2/8/9/11	-
2	MLY	D	9	2	-	0/8/9/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ALY	D	14	2	-	0/8/12/12	-
2	ALY	C	14	2	-	0/8/12/12	-
2	MLY	C	9[A]	-	-	3/8/9/11	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	9[B]	MLY	CD-CE-NZ-CH1
2	C	9[B]	MLY	CD-CE-NZ-CH2
2	C	9[A]	MLY	CD-CE-NZ-CH1
2	C	9[A]	MLY	CD-CE-NZ-CH2
2	C	9[A]	MLY	CE-CD-CG-CB

There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	9[B]	MLY	4	0
2	C	9[A]	MLY	1	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 7 ligands modelled in this entry, 5 are monoatomic - leaving 2 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	OGA	B	500	3	3,9,9	0.45	0	4,11,11	2.46	1 (25%)
6	OGA	A	500	3	3,9,9	0.50	0	4,11,11	2.83	1 (25%)

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
6	OGA	B	500	3	-	0/3/9/9	-
6	OGA	A	500	3	-	0/3/9/9	-

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
6	A	500	OGA	C1-C2-N1	5.55	121.11	115.60
6	B	500	OGA	C1-C2-N1	4.56	120.13	115.60

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
6	A	500	OGA	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	349/381 (91%)	0.46	23 (6%) 18 26	28, 34, 51, 61	0
1	B	348/381 (91%)	0.50	30 (8%) 10 16	26, 34, 51, 62	0
2	C	6/8 (75%)	0.11	0 100 100	36, 38, 41, 42	0
2	D	6/8 (75%)	1.27	2 (33%) 0 0	41, 45, 46, 46	0
All	All	709/778 (91%)	0.49	55 (7%) 13 20	26, 34, 51, 62	0

All (55) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	354	LEU	5.0
1	A	334	ALA	4.5
1	A	7	THR	4.5
1	B	354	LEU	4.4
1	B	307	SER	3.9
1	A	338	ASN	3.8
1	A	307	SER	3.8
1	A	351	ALA	3.6
1	A	353	PHE	3.6
1	B	338	ASN	3.5
1	B	311	ASP	3.5
2	D	7	ALA	3.5
1	A	350	ALA	3.5
1	A	331	LEU	3.4
1	B	8	LEU	3.4
1	A	144	HIS	3.3
1	A	335	GLY	3.2
1	A	25	ARG	3.2
1	B	269	ILE	2.9
1	B	312	MET	2.9
1	B	22	GLU	2.9

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Mol	Chain	Res	Type	RSRZ
1	B	44	LEU	2.9
1	B	111	TYR	2.9
1	B	208	TRP	2.9
1	B	270	THR	2.8
1	B	45	ALA	2.8
1	A	229	GLY	2.7
2	D	11	THR	2.7
1	B	335	GLY	2.6
1	A	112	SER	2.5
1	A	197	ILE	2.5
1	B	25	ARG	2.5
1	B	7	THR	2.5
1	A	57	ALA	2.5
1	B	196	SER	2.5
1	A	60	ASP	2.4
1	B	187	TRP	2.4
1	B	351	ALA	2.4
1	A	185	PHE	2.4
1	B	353	PHE	2.4
1	B	57	ALA	2.4
1	B	54	LYS	2.3
1	A	235	GLU	2.3
1	B	268	MET	2.3
1	A	145	VAL	2.3
1	B	21	MET	2.3
1	B	336	LYS	2.2
1	A	355	LYS	2.2
1	B	310	LYS	2.2
1	B	260	VAL	2.1
1	B	29	ARG	2.1
1	B	95	ARG	2.1
1	A	289	THR	2.0
1	A	196	SER	2.0
1	B	53	TRP	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, 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(\AA^2)	Q<0.9
2	ALY	C	14	13/13	0.92	0.19	31,38,54,57	0
2	ALY	D	14	13/13	0.93	0.20	41,46,57,58	0
2	MLY	D	9	11/12	0.93	0.11	21,34,38,41	0
2	MLY	C	9[B]	11/12	0.96	0.16	23,29,31,32	8
2	MLY	C	9[A]	11/12	0.96	0.16	22,29,36,36	8

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, 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(\AA^2)	Q<0.9
5	CL	A	503	1/1	0.89	0.13	64,64,64,64	0
6	OGA	B	500	10/10	0.97	0.15	32,34,37,40	0
6	OGA	A	500	10/10	0.98	0.11	31,34,35,36	0
4	ZN	A	502	1/1	0.99	0.05	40,40,40,40	0
4	ZN	B	502	1/1	0.99	0.04	40,40,40,40	0
3	NI	B	501	1/1	0.99	0.12	33,33,33,33	0
3	NI	A	501	1/1	1.00	0.11	32,32,32,32	0

6.5 Other polymers [i](#)

There are no such residues in this entry.