



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 23, 2025 – 11:47 pm BST

PDB ID : 2UXN / pdb_00002uxn
Title : Structural Basis of Histone Demethylation by LSD1 Revealed by Suicide In-activation
Authors : Yang, M.; Culhane, J.C.; Szewczuk, L.M.; Gocke, C.B.; Brautigam, C.A.; Tomchick, D.R.; Machius, M.; Cole, P.A.; Yu, H.
Deposited on : 2007-03-28
Resolution : 2.72 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 1.8.4, CSD as541be (2020)
Xtrriage (Phenix) : 2.0
EDS : 3.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.46

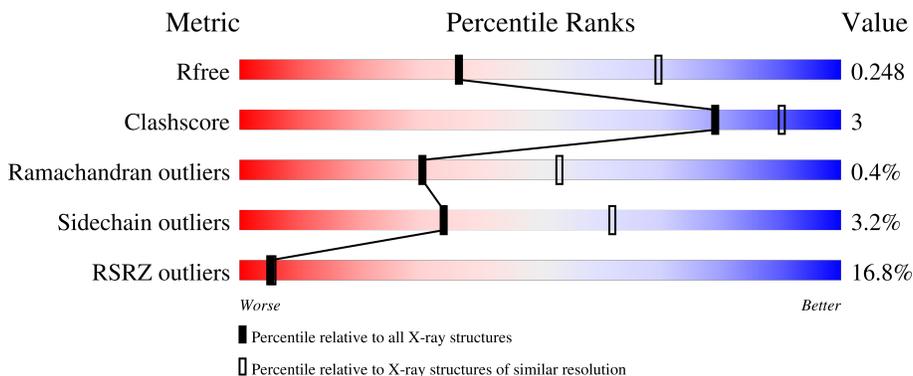
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.72 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}	164625	4050 (2.74-2.70)
Clashscore	180529	4439 (2.74-2.70)
Ramachandran outliers	177936	4374 (2.74-2.70)
Sidechain outliers	177891	4375 (2.74-2.70)
RSRZ outliers	164620	4050 (2.74-2.70)

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 of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	666	
2	B	235	
3	E	21	

2 Entry composition i

There are 7 unique types of molecules in this entry. The entry contains 6469 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 LYSINE-SPECIFIC HISTONE DEMETHYLASE 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	664	5215	3322	908	965	20	0	1	0

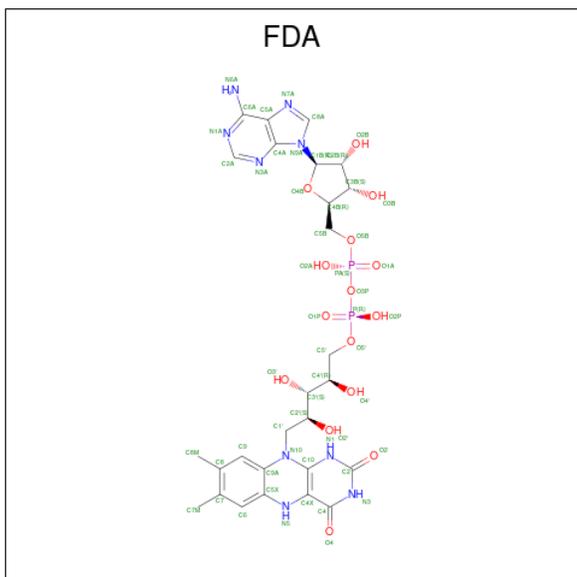
- Molecule 2 is a protein called REST COREPRESSOR 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	133	1085	681	195	206	3	0	1	0

- Molecule 3 is a protein called HISTONE H3.1.

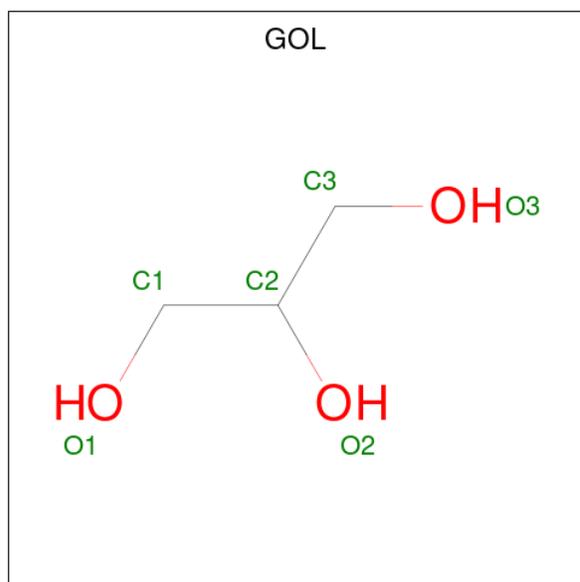
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
3	E	7	57	35	12	10	0	0	0

- Molecule 4 is DIHYDROFLAVINE-ADENINE DINUCLEOTIDE (CCD ID: FDA) (formula: $C_{27}H_{35}N_9O_{15}P_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
			Total	C	N	O			P
4	A	1	53	27	9	15	2	0	0

- Molecule 5 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 6 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cl		
6	A	2	2	2	0	0

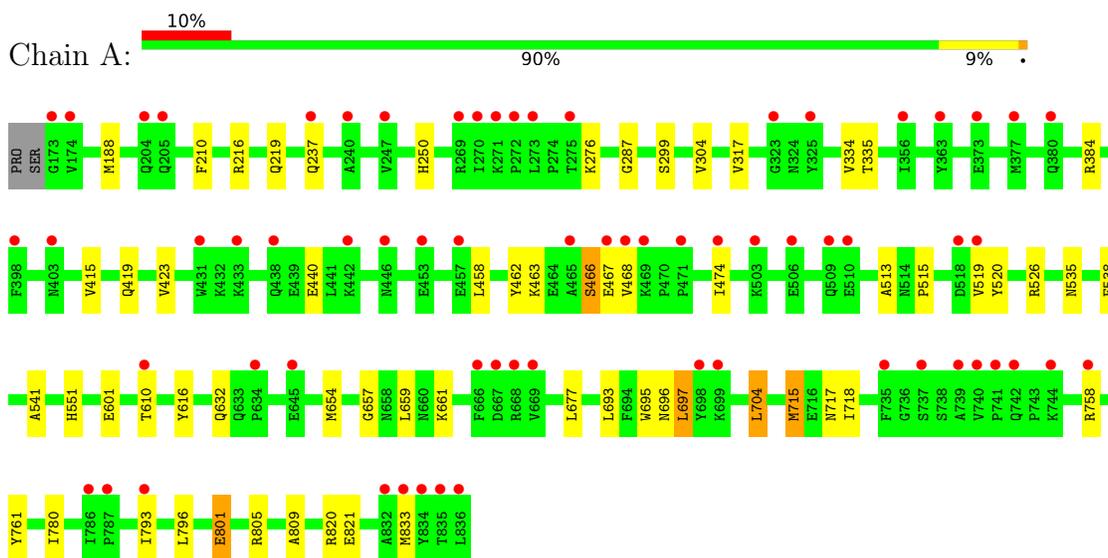
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
7	A	49	49	49	0	0
7	B	1	1	1	0	0
7	E	1	1	1	0	0

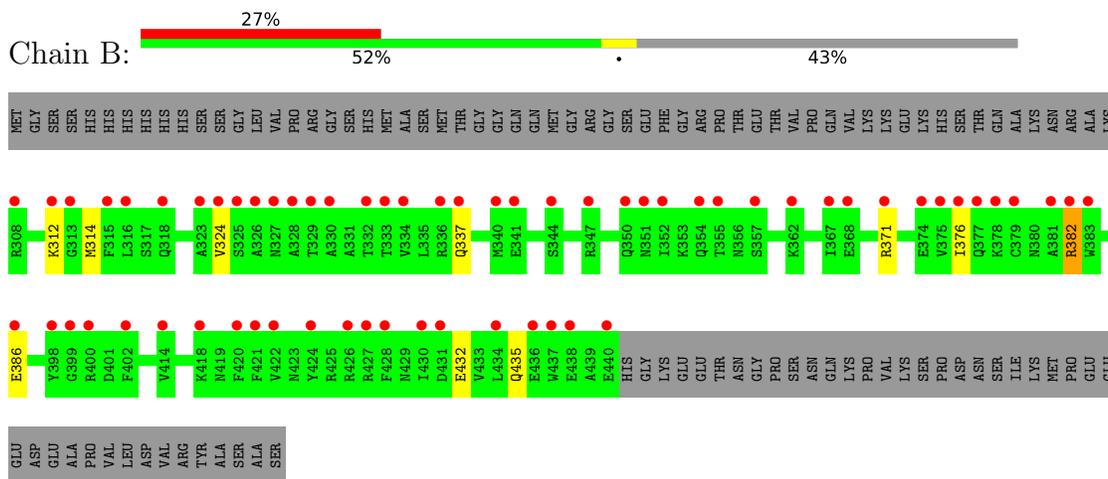
3 Residue-property plots [i](#)

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: LYSINE-SPECIFIC HISTONE DEMETHYLASE 1



- Molecule 2: REST COREPRESSOR 1



- Molecule 3: HISTONE H3.1



A1	A2	A3	LYP4	Q5	T6	A7	ARG	LYS	SER	THR	GLY	GLY	LYS	ALA	PRO	ARG	LYS	GLN	LEU	ALA
----	----	----	------	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

4 Data and refinement statistics

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	119.95Å 178.65Å 234.93Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.00 – 2.72 49.00 – 2.72	Depositor EDS
% Data completeness (in resolution range)	99.9 (49.00-2.72) 99.9 (49.00-2.72)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.91 (at 2.69Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.241 , 0.272 0.231 , 0.248	Depositor DCC
R_{free} test set	1542 reflections (2.20%)	wwPDB-VP
Wilson B-factor (Å ²)	65.8	Xtrriage
Anisotropy	0.620	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 51.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.52$, $\langle L^2 \rangle = 0.36$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	6469	wwPDB-VP
Average B, all atoms (Å ²)	75.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.92% 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: GOL, LYP, CL, FDA

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	0.45	0/5328	0.90	11/7227 (0.2%)
2	B	0.45	0/1100	0.83	0/1483
3	E	0.71	0/42	0.80	0/54
All	All	0.45	0/6470	0.89	11/8764 (0.1%)

There are no bond length outliers.

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	287	GLY	N-CA-C	-6.58	102.54	112.41
1	A	805	ARG	N-CA-C	6.02	118.63	111.71
1	A	551	HIS	N-CA-C	5.93	122.51	113.61
1	A	334	VAL	N-CA-C	-5.88	98.75	107.51
1	A	317	VAL	N-CA-C	-5.52	99.01	106.85
1	A	440	GLU	N-CA-C	-5.51	105.36	111.36
1	A	610	THR	N-CA-C	5.43	119.40	112.34
1	A	335	THR	N-CA-C	5.32	118.95	110.70
1	A	304	VAL	N-CA-C	5.27	115.49	108.11
1	A	474	ILE	N-CA-C	5.11	117.47	111.09
1	A	520	TYR	N-CA-C	-5.04	105.26	111.40

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	5215	0	5251	32	0
2	B	1085	0	1096	5	0
3	E	57	0	64	2	0
4	A	53	0	32	0	0
5	A	6	0	8	0	0
6	A	2	0	0	0	0
7	A	49	0	0	0	0
7	B	1	0	0	0	0
7	E	1	0	0	0	0
All	All	6469	0	6451	34	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 3.

All (34) 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:801:GLU:CG	1:A:809:ALA:H	1.88	0.84
1:A:801:GLU:HG2	1:A:809:ALA:H	1.41	0.83
1:A:801:GLU:HG3	1:A:809:ALA:HA	1.61	0.82
1:A:384:ARG:HB3	2:B:314:MET:HE1	1.65	0.77
1:A:801:GLU:HG3	1:A:809:ALA:CA	2.18	0.73
1:A:801:GLU:HG3	1:A:809:ALA:N	2.12	0.64
1:A:801:GLU:CG	1:A:809:ALA:N	2.61	0.62
1:A:384:ARG:HB3	2:B:314:MET:CE	2.28	0.62
1:A:695:TRP:HE3	1:A:697:LEU:HD21	1.70	0.56
1:A:761:TYR:CD1	1:A:809:ALA:HB1	2.43	0.53
1:A:793:ILE:HD12	1:A:793:ILE:H	1.74	0.53
1:A:661:LYS:HD3	1:A:704:LEU:HD21	1.91	0.51
1:A:801:GLU:HG3	1:A:809:ALA:H	1.65	0.50
1:A:761:TYR:CZ	3:E:4:LYP:HCC2	2.47	0.50
1:A:715:MET:HA	1:A:718:ILE:HD12	1.93	0.49
1:A:216:ARG:NH1	1:A:219:GLN:OE1	2.46	0.49
2:B:432:GLU:O	2:B:435:GLN:HG2	2.14	0.47
1:A:780:ILE:HB	1:A:796:LEU:HB3	1.96	0.47
1:A:463:LYS:O	1:A:467:GLU:HG2	2.15	0.47
1:A:415:VAL:O	1:A:419:GLN:HG2	2.17	0.45
1:A:188:MET:HE3	1:A:210:PHE:CE2	2.52	0.45
1:A:541:ALA:O	1:A:657:GLY:HA3	2.17	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:384:ARG:NH1	2:B:312:LYS:O	2.49	0.44
1:A:535:ASN:HD21	3:E:5:GLN:HE22	1.66	0.44
1:A:632:GLN:HG3	1:A:758[B]:ARG:CZ	2.49	0.43
1:A:820:ARG:NE	1:A:821:GLU:OE2	2.45	0.42
2:B:382:ARG:HE	2:B:382:ARG:HB3	1.58	0.42
1:A:601:GLU:HA	1:A:616:TYR:O	2.19	0.42
1:A:654:MET:HE2	1:A:654:MET:HB3	1.96	0.42
1:A:526:ARG:HA	1:A:526:ARG:HD2	1.91	0.42
1:A:462:TYR:O	1:A:466:SER:HB2	2.21	0.41
1:A:695:TRP:HB2	1:A:704:LEU:HB3	2.02	0.41
1:A:677:LEU:HB2	1:A:693:LEU:HD11	2.03	0.40
1:A:513:ALA:C	1:A:515:PRO:HD3	2.46	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	663/666 (100%)	645 (97%)	17 (3%)	1 (0%)	44	67
2	B	132/235 (56%)	126 (96%)	5 (4%)	1 (1%)	16	36
3	E	4/21 (19%)	1 (25%)	2 (50%)	1 (25%)	0	0
All	All	799/922 (87%)	772 (97%)	24 (3%)	3 (0%)	30	53

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	468	VAL
2	B	376	ILE
3	E	5	GLN

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	565/566 (100%)	548 (97%)	17 (3%)	36	64
2	B	118/203 (58%)	112 (95%)	6 (5%)	20	43
3	E	4/14 (29%)	4 (100%)	0	100	100
All	All	687/783 (88%)	664 (97%)	23 (3%)	34	61

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	237	GLN
1	A	250	HIS
1	A	276	LYS
1	A	299	SER
1	A	423	VAL
1	A	458	LEU
1	A	466	SER
1	A	519	VAL
1	A	538	PHE
1	A	659	LEU
1	A	696	ASN
1	A	697	LEU
1	A	704	LEU
1	A	715	MET
1	A	717	ASN
1	A	801	GLU
1	A	833	MET
2	B	324	VAL
2	B	337	GLN
2	B	371	ARG
2	B	382	ARG
2	B	386[A]	GLU
2	B	386[B]	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	228	GLN
1	A	237	GLN
1	A	399	ASN
1	A	535	ASN
1	A	592	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	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	LYP	E	4	3	11,12,13	0.77	0	8,13,15	0.73	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	LYP	E	4	3	-	3/11/12/14	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	E	4	LYP	CCA-CCC-CCD-NZ

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
3	E	4	LYP	C-CA-CB-CG
3	E	4	LYP	CD-CE-NZ-CM

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	E	4	LYP	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 2 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$
5	GOL	A	1837	-	5,5,5	0.38	0	5,5,5	0.30	0
4	FDA	A	900	-	52,58,58	2.51	12 (23%)	60,89,89	1.91	10 (16%)

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
5	GOL	A	1837	-	-	0/4/4/4	-
4	FDA	A	900	-	-	11/30/50/50	0/6/6/6

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	900	FDA	C4X-N5	6.84	1.50	1.35
4	A	900	FDA	C2-N3	6.37	1.48	1.37
4	A	900	FDA	C10-N1	6.36	1.48	1.37
4	A	900	FDA	C2-N1	6.25	1.48	1.37
4	A	900	FDA	C5X-N5	5.29	1.48	1.39
4	A	900	FDA	C10-N10	5.11	1.47	1.38
4	A	900	FDA	C4-N3	4.86	1.47	1.38
4	A	900	FDA	C9A-N10	4.63	1.49	1.41
4	A	900	FDA	C4X-C4	3.60	1.51	1.42
4	A	900	FDA	PA-O1A	2.93	1.61	1.50
4	A	900	FDA	P-O1P	2.68	1.60	1.50
4	A	900	FDA	C5A-N7A	-2.03	1.32	1.39

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	900	FDA	C4-N3-C2	-9.02	113.34	126.34
4	A	900	FDA	N3A-C2A-N1A	-5.35	120.32	128.68
4	A	900	FDA	N3-C2-N1	4.69	123.33	115.80
4	A	900	FDA	O4-C4-C4X	-3.47	119.28	127.24
4	A	900	FDA	C5X-N5-C4X	-3.39	113.01	121.02
4	A	900	FDA	O4B-C1B-C2B	-3.07	102.43	106.93
4	A	900	FDA	P-O3P-PA	-2.66	123.71	132.83
4	A	900	FDA	C4X-C4-N3	2.47	119.66	112.31
4	A	900	FDA	C5'-C4'-C3'	-2.28	107.80	112.20
4	A	900	FDA	O4'-C4'-C3'	2.10	114.21	109.10

There are no chirality outliers.

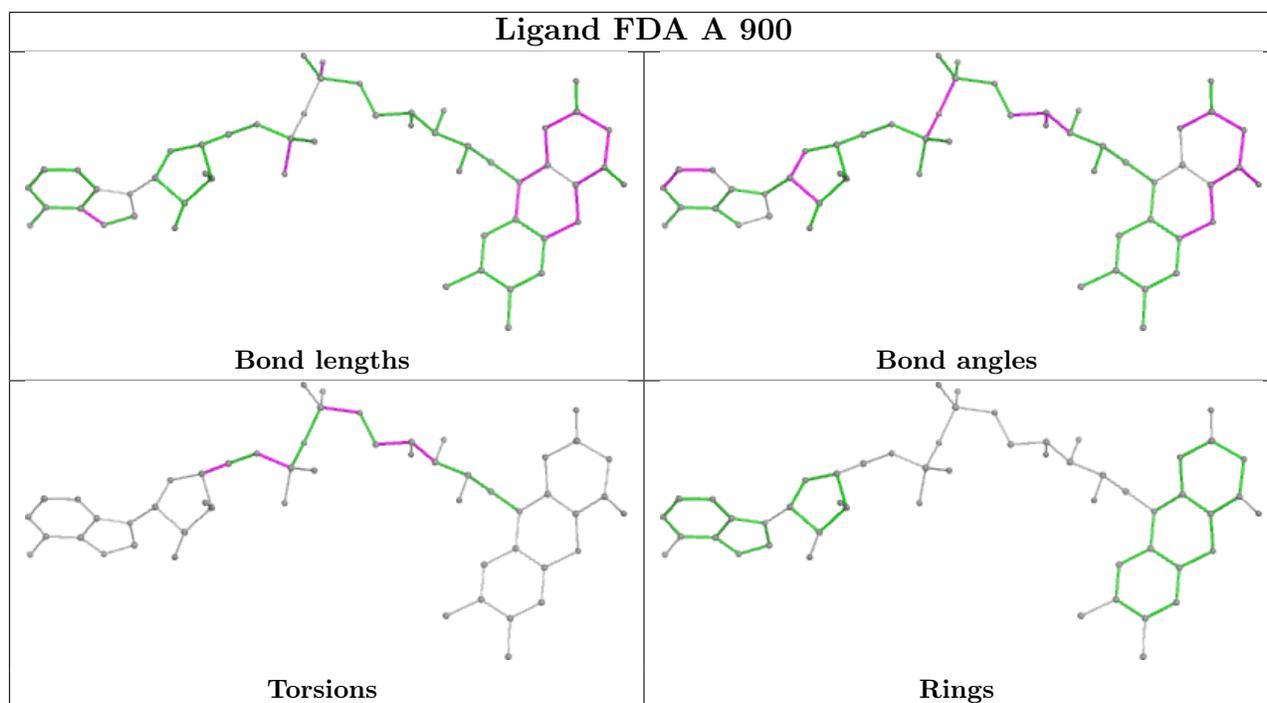
All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	900	FDA	C3'-C4'-C5'-O5'
4	A	900	FDA	O4'-C4'-C5'-O5'
4	A	900	FDA	C5'-O5'-P-O3P
4	A	900	FDA	C5'-O5'-P-O1P
4	A	900	FDA	C5'-O5'-P-O2P
4	A	900	FDA	C2'-C3'-C4'-O4'
4	A	900	FDA	O3'-C3'-C4'-C5'
4	A	900	FDA	C2'-C3'-C4'-C5'
4	A	900	FDA	O3'-C3'-C4'-O4'
4	A	900	FDA	C5B-O5B-PA-O2A
4	A	900	FDA	O4B-C4B-C5B-O5B

There are no ring outliers.

No monomer is involved in short contacts.

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 than 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, 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	664/666 (99%)	0.70	66 (9%) 14 14	25, 69, 96, 106	1 (0%)
2	B	133/235 (56%)	2.03	63 (47%) 0 1	40, 100, 124, 136	1 (0%)
3	E	6/21 (28%)	8.00	6 (100%) 0 0	112, 118, 121, 122	0
All	All	803/922 (87%)	0.97	135 (16%) 5 5	25, 74, 111, 136	2 (0%)

All (135) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	E	1	ALA	15.0
1	A	836	LEU	9.6
3	E	3	THR	8.5
1	A	835	THR	8.5
3	E	7	ALA	8.0
2	B	378	LYS	7.3
2	B	376	ILE	6.9
1	A	834	TYR	6.6
3	E	5	GLN	6.1
3	E	6	THR	5.9
2	B	375	VAL	5.7
1	A	833	MET	5.5
2	B	328	ALA	5.4
1	A	832	ALA	5.0
2	B	308	ARG	4.8
3	E	2	ARG	4.5
2	B	440	GLU	4.5
2	B	333	THR	4.5
1	A	467	GLU	4.4
2	B	399	GLY	4.1
2	B	340	MET	4.1
1	A	787	PRO	3.8
1	A	698	TYR	3.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
2	B	350	GLN	3.8
2	B	337	GLN	3.6
1	A	403	ASN	3.5
1	A	758[A]	ARG	3.5
1	A	173	GLY	3.4
1	A	275	THR	3.3
1	A	669	VAL	3.3
2	B	400	ARG	3.3
2	B	437	TRP	3.3
1	A	668	ARG	3.2
2	B	347	ARG	3.2
2	B	386[A]	GLU	3.2
2	B	382	ARG	3.2
1	A	518	ASP	3.2
2	B	344	SER	3.2
2	B	377	GLN	3.2
2	B	354	GLN	3.1
1	A	739	ALA	3.1
2	B	313	GLY	3.1
1	A	744	LYS	3.1
2	B	329	THR	3.0
2	B	427	ARG	3.0
1	A	174	VAL	3.0
2	B	351	ASN	3.0
1	A	273	LEU	2.9
1	A	363	TYR	2.9
1	A	205	GLN	2.9
1	A	237	GLN	2.9
2	B	379	CYS	2.9
1	A	240	ALA	2.8
2	B	323	ALA	2.8
1	A	325	TYR	2.8
2	B	374	GLU	2.8
2	B	332	THR	2.8
2	B	421	PHE	2.7
2	B	418	LYS	2.7
2	B	362	LYS	2.7
2	B	381	ALA	2.7
1	A	667	ASP	2.7
1	A	377	MET	2.7
1	A	737	SER	2.7
1	A	503	LYS	2.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
2	B	336	ARG	2.6
1	A	610	THR	2.6
2	B	326	ALA	2.6
1	A	506	GLU	2.5
1	A	446	ASN	2.5
1	A	468	VAL	2.5
1	A	442	LYS	2.5
1	A	453	GLU	2.5
1	A	398	PHE	2.5
2	B	383	TRP	2.5
2	B	434	LEU	2.5
1	A	438	GLN	2.5
2	B	327	ASN	2.5
1	A	519	VAL	2.5
1	A	786	ILE	2.4
1	A	699	LYS	2.4
1	A	740	VAL	2.4
2	B	334	VAL	2.4
2	B	355	THR	2.4
2	B	341	GLU	2.4
1	A	272	PRO	2.4
1	A	380	GLN	2.4
1	A	356	ILE	2.4
2	B	436	GLU	2.4
1	A	271	LYS	2.3
2	B	367	ILE	2.3
1	A	645	GLU	2.3
2	B	398	TYR	2.3
2	B	438	GLU	2.3
1	A	373	GLU	2.3
1	A	510	GLU	2.3
1	A	247	VAL	2.3
2	B	414	VAL	2.3
2	B	428	PHE	2.3
1	A	270	ILE	2.3
2	B	330	ALA	2.3
1	A	469	LYS	2.2
2	B	312	LYS	2.2
2	B	316	LEU	2.3
2	B	325	SER	2.3
1	A	465	ALA	2.2
1	A	741	PRO	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	666	PHE	2.2
2	B	315	PHE	2.2
2	B	426	ARG	2.2
2	B	402	PHE	2.2
2	B	318	GLN	2.2
1	A	457	GLU	2.1
2	B	357	SER	2.1
2	B	324	VAL	2.1
2	B	352	ILE	2.1
1	A	433	LYS	2.1
1	A	474	ILE	2.1
1	A	742	GLN	2.1
2	B	422	VAL	2.1
2	B	424	TYR	2.1
2	B	368	GLU	2.1
1	A	735	PHE	2.1
2	B	431	ASP	2.1
1	A	323	GLY	2.1
1	A	471	PRO	2.1
2	B	420	PHE	2.1
2	B	371	ARG	2.1
1	A	634	PRO	2.0
1	A	431	TRP	2.0
1	A	793	ILE	2.0
2	B	430	ILE	2.0
1	A	204	GLN	2.0
1	A	509	GLN	2.0
1	A	269	ARG	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(Å ²)	Q<0.9
3	LYP	E	4	13/14	0.79	0.39	65,91,111,111	0

6.3 Carbohydrates [i](#)

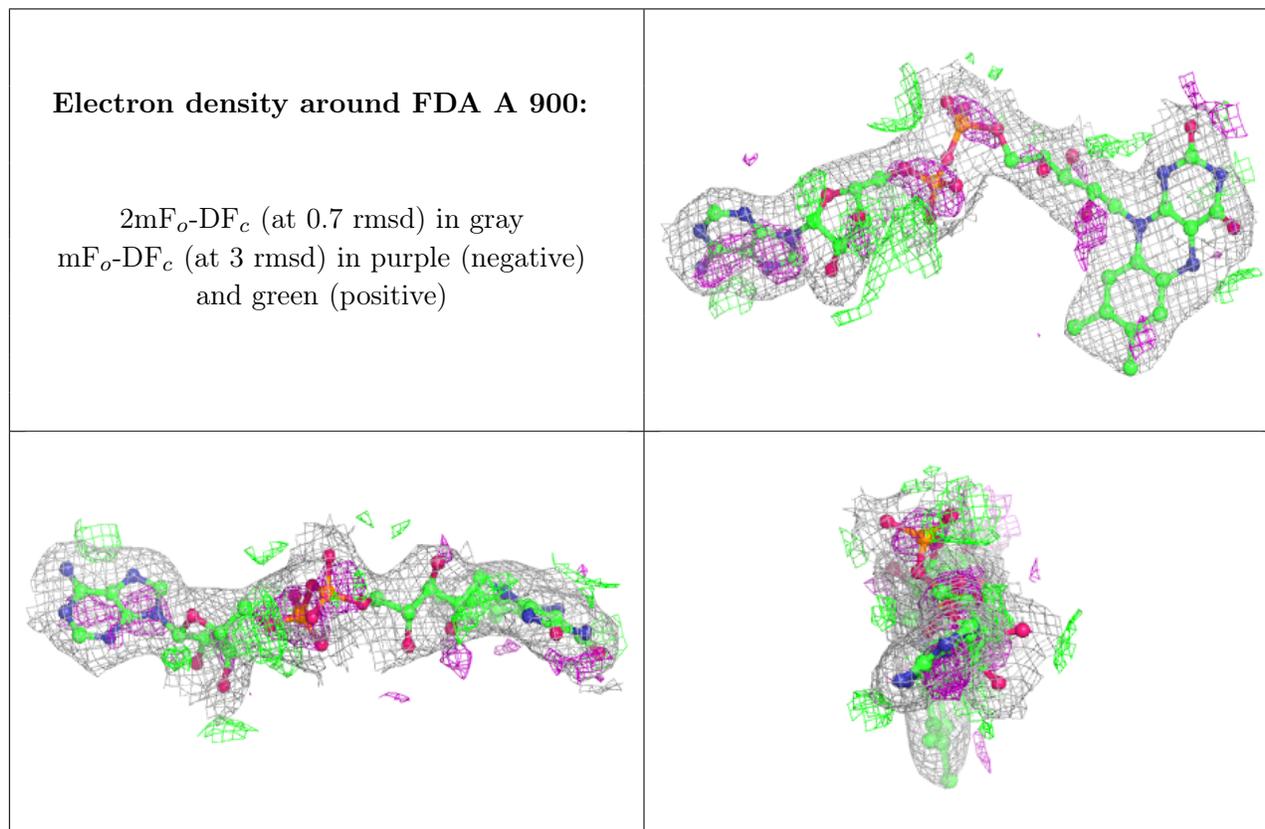
There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
6	CL	A	1839	1/1	0.88	0.20	87,87,87,87	0
6	CL	A	1838	1/1	0.94	0.32	109,109,109,109	0
5	GOL	A	1837	6/6	0.94	0.15	64,65,66,67	0
4	FDA	A	900	53/53	0.97	0.09	37,48,59,62	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.