WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 04:47 pm GMT

PDB ID	:	9RRY / pdb_00009rry
Title	:	Crystal structure of the human METTL3-METTL14 in complex with compound 1 (AD-79)
Authors	:	Bedi, R.K.; Dolbois, A.; Caflisch, A.
Deposited on	:	2025-06-30
Resolution	:	1.91 Å(reported)

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

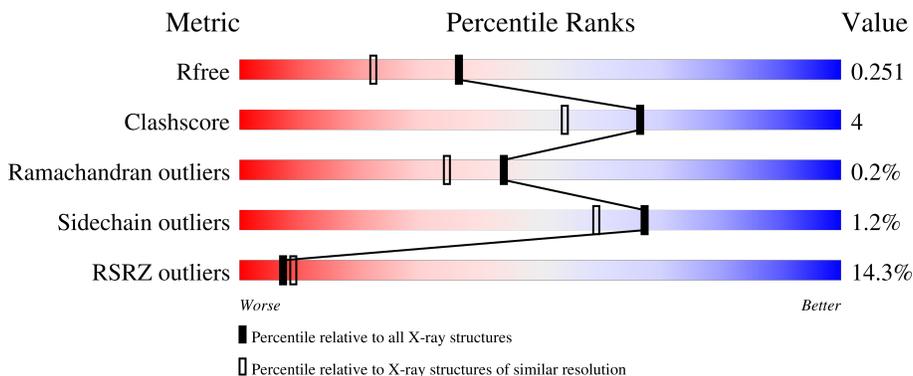|		
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

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 1.91 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	Percentile Ranks	Value
Rfree		0.251
Clashscore		4
Ramachandran outliers		0.2%
Sidechain outliers		1.2%
RSRZ outliers		14.3%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1028 (1.92-1.92)
Clashscore	180529	1100 (1.92-1.92)
Ramachandran outliers	177936	1087 (1.92-1.92)
Sidechain outliers	177891	1087 (1.92-1.92)
RSRZ outliers	164620	1028 (1.92-1.92)

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	228	11% / 80% 8% 12%
2	B	307	12% / 69% 6% · 24%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 3497 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 N6-adenosine-methyltransferase catalytic subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	201	Total	C	N	O	S	0	0	0
			1545	997	266	273	9			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	353	MET	-	initiating methionine	UNP Q86U44

- Molecule 2 is a protein called N(6)-adenosine-methyltransferase non-catalytic subunit METTL14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	234	Total	C	N	O	S	0	1	0
			1775	1140	301	321	13			

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	89	MET	-	initiating methionine	UNP Q9HCE5
B	90	HIS	-	expression tag	UNP Q9HCE5
B	91	HIS	-	expression tag	UNP Q9HCE5
B	92	HIS	-	expression tag	UNP Q9HCE5
B	93	HIS	-	expression tag	UNP Q9HCE5
B	94	HIS	-	expression tag	UNP Q9HCE5
B	95	HIS	-	expression tag	UNP Q9HCE5
B	96	SER	-	expression tag	UNP Q9HCE5
B	97	SER	-	expression tag	UNP Q9HCE5
B	98	GLY	-	expression tag	UNP Q9HCE5
B	99	ARG	-	expression tag	UNP Q9HCE5
B	100	GLU	-	expression tag	UNP Q9HCE5
B	101	ASN	-	expression tag	UNP Q9HCE5
B	102	LEU	-	expression tag	UNP Q9HCE5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	103	TYR	-	expression tag	UNP Q9HCE5
B	104	PHE	-	expression tag	UNP Q9HCE5
B	105	GLN	-	expression tag	UNP Q9HCE5
B	106	GLY	-	expression tag	UNP Q9HCE5

- Molecule 3 is 8-[4-[(4,4-dimethylpiperidin-1-yl)methyl]phenyl]-2-[6-(methylamino)pyrimidin-4-yl]-2,5,8-triazaspiro[3.5]nonan-6-one (CCD ID: A1JJA) (formula: $C_{25}H_{35}N_7O$) (labeled as "Ligand of Interest" by depositor).
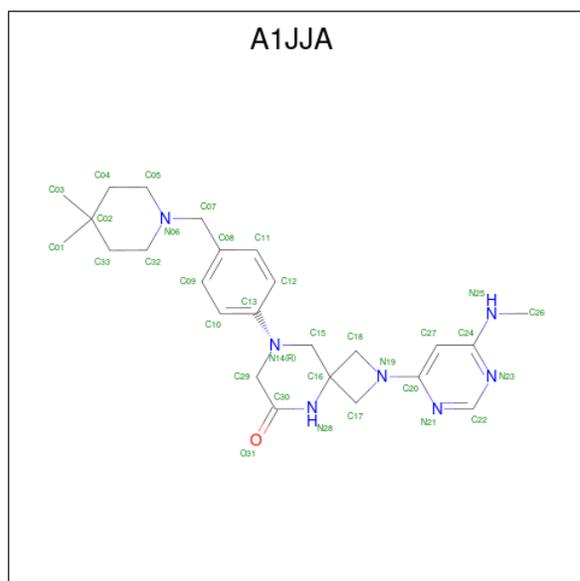
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 33	C 25	N 7	O 1	0	0
3	B	1	Total 33	C 25	N 7	O 1	0	0

- Molecule 4 is ACETATE ION (CCD ID: ACT) (formula: $C_2H_3O_2$).

ACT

OXT

O^-

C

CH3

O

O
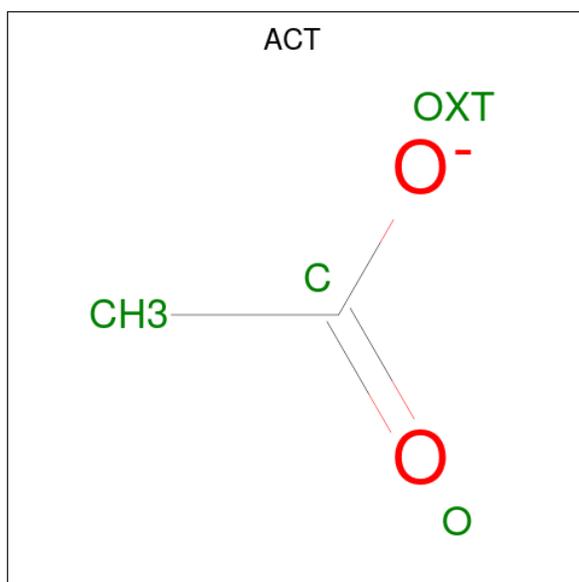
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total 4	C 2	O 2	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	35	Total 35	O 35	0	0
5	B	72	Total 72	O 72	0	0

W O R L D W I D E
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# 3 Residue-property plots ⓘ

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: N6-adenosine-methyltransferase catalytic subunit

Chain A:
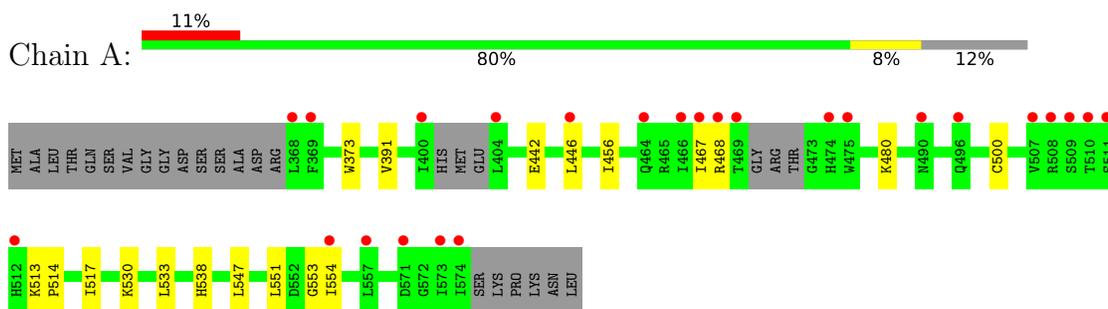
- Molecule 2: N(6)-adenosine-methyltransferase non-catalytic subunit METTL14

Chain B:
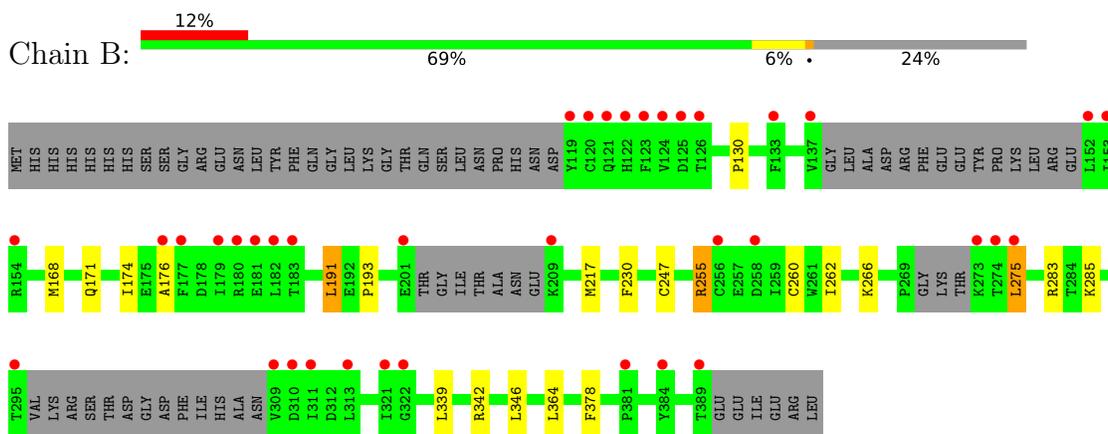
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	63.98Å 63.98Å 226.18Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	44.65 – 1.91 44.65 – 1.91	Depositor EDS
% Data completeness (in resolution range)	99.9 (44.65-1.91) 99.8 (44.65-1.91)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.14 (at 1.91Å)	Xtriage
Refinement program	PHENIX 1.21.2_5419	Depositor
R, R_{free}	0.221 , 0.251 0.221 , 0.251	Depositor DCC
R_{free} test set	2128 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	46.9	Xtriage
Anisotropy	0.086	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 46.7	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.029 for -h,-k,l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	3497	wwPDB-VP
Average B, all atoms (Å^2)	51.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.49% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 ⓘ

5.1   Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: A1JJA, ACT

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	0.30	0/1586	0.51	0/2165
2	B	0.37	0/1822	0.56	0/2481
All	All	0.34	0/3408	0.53	0/4646

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 ⓘ

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	1545	0	1451	12	0
2	B	1775	0	1631	14	0
3	A	33	0	0	0	0
3	B	33	0	0	0	0
4	B	4	0	3	1	0
5	A	35	0	0	0	0
5	B	72	0	0	0	0
All	All	3497	0	3085	23	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 4.

All (23) 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:373:TRP:HB2	1:A:551:LEU:HD13	1.76	0.67
2:B:191:LEU:HD22	2:B:193:PRO:HD3	1.77	0.64
1:A:456:ILE:HD11	2:B:262:ILE:HD11	1.83	0.61
2:B:255:ARG:HB2	4:B:402:ACT:H3	1.85	0.59
1:A:442:GLU:O	1:A:446:LEU:HG	2.01	0.59
1:A:391:VAL:HB	1:A:530:LYS:HG2	1.88	0.54
2:B:217:MET:HG2	2:B:247:CYS:SG	2.50	0.51
2:B:171:GLN:HG3	2:B:364:LEU:O	2.11	0.50
1:A:538:HIS:H	1:A:538:HIS:CD2	2.31	0.49
1:A:533:LEU:HD22	1:A:547:LEU:HD12	1.93	0.48
2:B:174:ILE:HD13	2:B:346:LEU:HD22	1.96	0.48
1:A:467:ILE:HG22	1:A:468:ARG:O	2.15	0.47
2:B:275:LEU:HD21	2:B:283:ARG:H	1.81	0.46
2:B:230:PHE:CE1	2:B:339:LEU:HD22	2.51	0.45
1:A:513:LYS:HB2	1:A:513:LYS:HE2	1.73	0.45
2:B:217:MET:HE2	2:B:217:MET:HB3	1.74	0.45
1:A:480:LYS:HE2	2:B:260[A]:CYS:SG	2.56	0.44
1:A:500:CYS:SG	2:B:130:PRO:HD2	2.58	0.44
2:B:168:MET:HE3	2:B:168:MET:HB2	1.81	0.43
1:A:514:PRO:O	1:A:517:ILE:HG22	2.19	0.42
1:A:553:GLY:C	1:A:554:ILE:HD12	2.44	0.42
2:B:260[B]:CYS:SG	2:B:285:LYS:HD2	2.59	0.42
2:B:342:ARG:HG3	2:B:378:PHE:CZ	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	195/228 (86%)	190 (97%)	5 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	225/307 (73%)	213 (95%)	11 (5%)	1 (0%)	30	19
All	All	420/535 (78%)	403 (96%)	16 (4%)	1 (0%)	44	34

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	176	ALA

5.3.2　Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	155/200 (78%)	155 (100%)	0	100	100
2	B	175/274 (64%)	171 (98%)	4 (2%)	45	30
All	All	330/474 (70%)	326 (99%)	4 (1%)	67	59

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

Mol	Chain	Res	Type
2	B	191	LEU
2	B	255	ARG
2	B	266	LYS
2	B	275	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	538	HIS
1	A	539	ASN
1	A	555	HIS
2	B	366	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

3 ligands 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	$\#|Z| > 2$
3	A1JJA	B	401	-	34,37,37	5.32	22 (64%)	40,55,55	2.13	13 (32%)
3	A1JJA	A	601	-	34,37,37	5.26	23 (67%)	40,55,55	2.34	12 (30%)
4	ACT	B	402	-	3,3,3	1.26	0	3,3,3	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
3	A1JJA	B	401	-	-	2/10/50/50	0/4/5/5
3	A1JJA	A	601	-	-	2/10/50/50	0/5/5/5

All (45) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	401	A1JJA	C07-N06	-13.06	1.22	1.47
3	A	601	A1JJA	C07-N06	-12.86	1.22	1.47
3	A	601	A1JJA	C30-N28	9.42	1.47	1.34
3	B	401	A1JJA	C30-N28	9.21	1.46	1.34
3	B	401	A1JJA	C12-C11	8.02	1.53	1.38
3	A	601	A1JJA	C09-C10	7.90	1.53	1.38
3	A	601	A1JJA	C22-N21	7.80	1.48	1.33
3	B	401	A1JJA	C22-N23	7.79	1.48	1.33
3	A	601	A1JJA	C12-C11	7.70	1.52	1.38
3	A	601	A1JJA	C22-N23	7.65	1.48	1.33
3	B	401	A1JJA	C22-N21	7.57	1.48	1.33
3	B	401	A1JJA	C09-C10	7.52	1.52	1.38
3	B	401	A1JJA	C12-C13	7.38	1.53	1.39
3	A	601	A1JJA	C10-C13	7.01	1.53	1.39
3	B	401	A1JJA	C11-C08	6.80	1.53	1.38
3	B	401	A1JJA	C10-C13	6.80	1.52	1.39
3	A	601	A1JJA	C12-C13	6.76	1.52	1.39
3	B	401	A1JJA	C27-C20	6.75	1.50	1.39
3	A	601	A1JJA	C11-C08	6.66	1.53	1.38
3	A	601	A1JJA	C09-C08	6.58	1.53	1.38
3	B	401	A1JJA	C09-C08	6.55	1.53	1.38
3	A	601	A1JJA	C27-C20	6.00	1.48	1.39
3	B	401	A1JJA	C04-C02	-5.68	1.44	1.53
3	A	601	A1JJA	C24-N23	5.64	1.45	1.34
3	B	401	A1JJA	C33-C02	-5.58	1.44	1.53
3	B	401	A1JJA	C24-N23	5.56	1.44	1.34
3	A	601	A1JJA	C04-C02	-5.53	1.44	1.53
3	A	601	A1JJA	C20-N21	5.44	1.45	1.34
3	A	601	A1JJA	C33-C02	-5.37	1.45	1.53
3	B	401	A1JJA	C20-N21	5.12	1.44	1.34
3	A	601	A1JJA	C29-C30	4.71	1.57	1.51
3	B	401	A1JJA	C29-C30	4.68	1.57	1.51
3	B	401	A1JJA	C15-C16	-4.55	1.48	1.53
3	B	401	A1JJA	C24-N25	4.46	1.45	1.36
3	A	601	A1JJA	C24-N25	4.23	1.45	1.36
3	A	601	A1JJA	C15-C16	-4.11	1.49	1.53
3	B	401	A1JJA	C27-C24	3.91	1.49	1.39
3	A	601	A1JJA	C27-C24	3.69	1.48	1.39
3	A	601	A1JJA	C20-N19	3.65	1.45	1.37
3	B	401	A1JJA	C20-N19	3.50	1.44	1.37
3	B	401	A1JJA	C13-N14	2.54	1.45	1.38
3	A	601	A1JJA	C13-N14	2.35	1.45	1.38
3	A	601	A1JJA	O31-C30	-2.26	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	401	A1JJA	O31-C30	-2.10	1.19	1.23
3	A	601	A1JJA	C15-N14	-2.04	1.44	1.46

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	601	A1JJA	N23-C22-N21	-6.17	118.96	128.60
3	A	601	A1JJA	C22-N21-C20	5.76	119.97	114.94
3	B	401	A1JJA	C22-N21-C20	5.57	119.81	114.94
3	B	401	A1JJA	N23-C22-N21	-5.52	119.97	128.60
3	A	601	A1JJA	C04-C05-N06	5.35	116.51	111.23
3	A	601	A1JJA	C26-N25-C24	-4.29	119.28	122.97
3	A	601	A1JJA	C33-C02-C04	4.12	114.35	108.71
3	B	401	A1JJA	C26-N25-C24	-4.04	119.50	122.97
3	B	401	A1JJA	C10-C13-N14	-3.77	116.19	121.38
3	B	401	A1JJA	C08-C07-N06	3.47	119.86	113.12
3	A	601	A1JJA	C18-N19-C20	3.45	136.08	125.37
3	A	601	A1JJA	C33-C32-N06	3.33	114.52	111.23
3	B	401	A1JJA	C18-N19-C20	2.87	134.27	125.37
3	A	601	A1JJA	C32-N06-C05	2.85	115.25	108.83
3	B	401	A1JJA	C33-C02-C04	2.71	112.42	108.71
3	A	601	A1JJA	C29-N14-C15	-2.68	108.35	112.61
3	A	601	A1JJA	C17-C16-C18	2.45	90.72	87.22
3	B	401	A1JJA	C07-C08-C09	-2.31	116.42	120.77
3	B	401	A1JJA	C27-C24-N23	-2.27	119.59	122.75
3	B	401	A1JJA	C29-C30-N28	-2.24	115.67	118.06
3	A	601	A1JJA	C17-N19-C20	2.20	132.20	125.37
3	A	601	A1JJA	C08-C07-N06	-2.20	108.85	113.12
3	B	401	A1JJA	C17-N19-C20	2.10	131.89	125.37
3	B	401	A1JJA	C15-N14-C13	2.07	123.52	118.44
3	B	401	A1JJA	C07-N06-C05	-2.07	106.46	111.06

There are no chirality outliers.
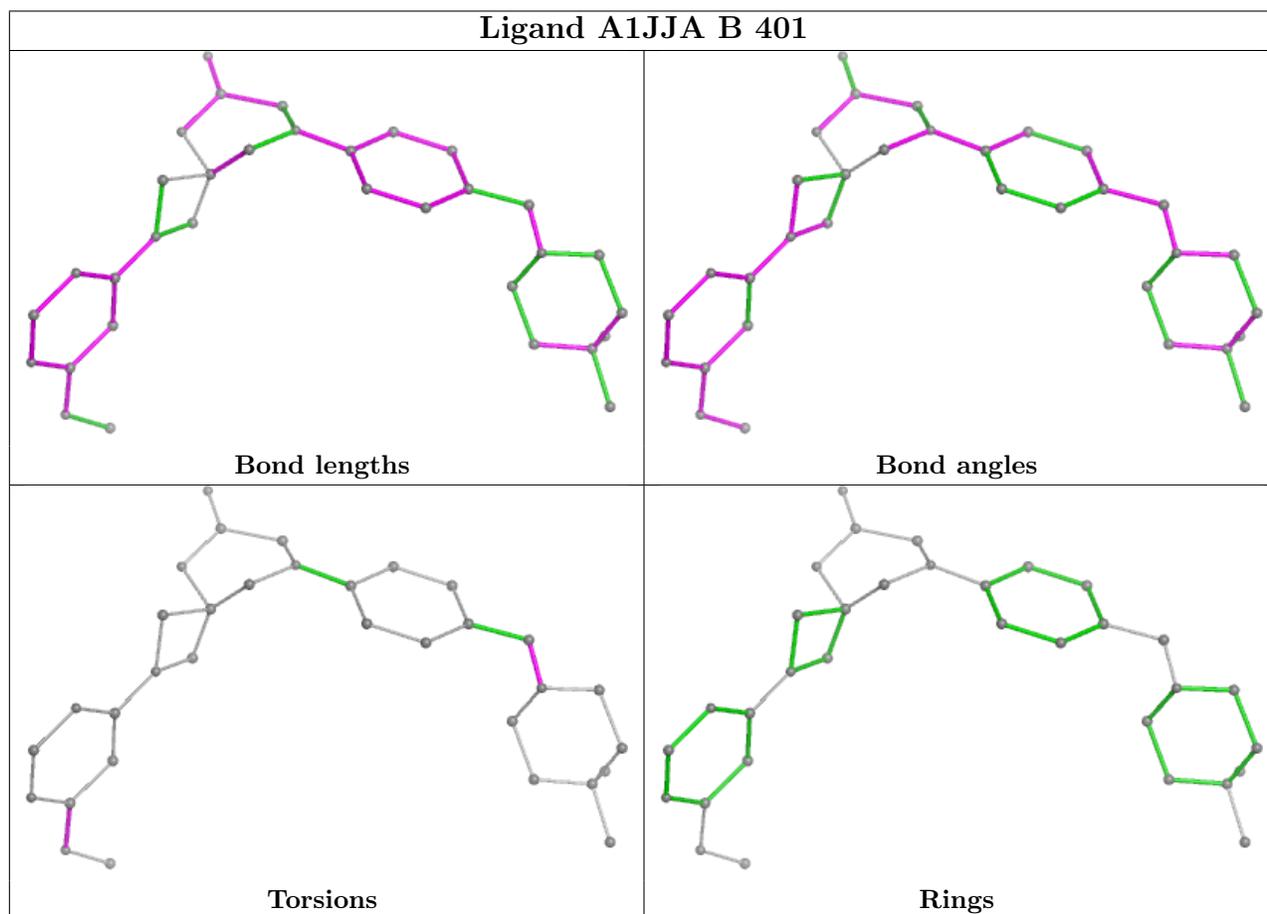
All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	601	A1JJA	C27-C24-N25-C26
3	A	601	A1JJA	N23-C24-N25-C26
3	B	401	A1JJA	N23-C24-N25-C26
3	B	401	A1JJA	C08-C07-N06-C32

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	402	ACT	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 A1JJA B 401

Bond lengths

Bond angles

Torsions

Rings

Ligand A1JJA A 601

Bond lengths

Bond angles

Torsions

Rings
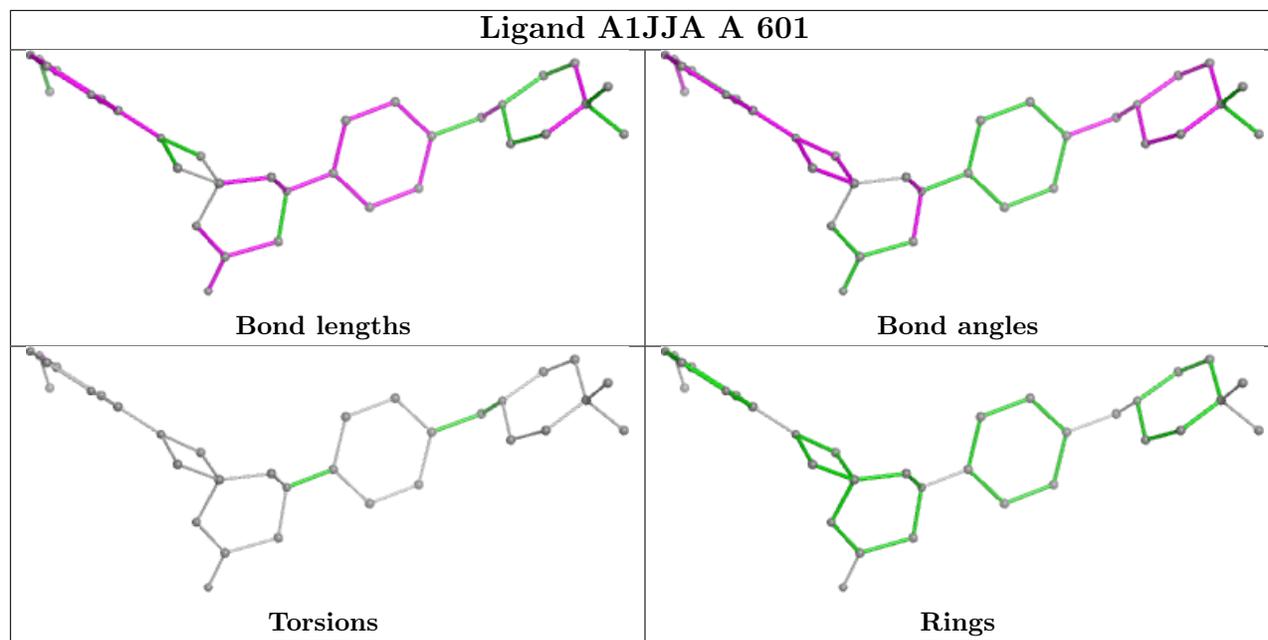
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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(Å²)	Q<0.9
1	A	201/228 (88%)	0.88	25 (12%)	9	12	35, 53, 80, 92	0
2	B	234/307 (76%)	0.91	37 (15%)	6	7	27, 46, 83, 98	1 (0%)
All	All	435/535 (81%)	0.90	62 (14%)	7	9	27, 49, 83, 98	1 (0%)

All (62) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	182	LEU	6.1
2	B	124	VAL	6.0
2	B	177	PHE	5.5
1	A	369	PHE	5.0
2	B	125	ASP	4.8
2	B	183	THR	4.4
2	B	295	THR	4.1
2	B	120	CYS	3.9
2	B	310	ASP	3.8
1	A	507	VAL	3.8
1	A	404	LEU	3.6
2	B	179	ILE	3.6
2	B	322	GLY	3.6
2	B	153	ILE	3.5
1	A	573	ILE	3.5
2	B	176	ALA	3.4
2	B	180	ARG	3.4
1	A	467	ILE	3.3
2	B	309	VAL	3.3
1	A	512	HIS	3.3
1	A	574	ILE	3.3
2	B	381	PRO	3.2
2	B	152	LEU	3.2
1	A	475	TRP	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	510	THR	3.1
2	B	122	HIS	3.1
2	B	119	TYR	3.1
2	B	274	THR	3.1
2	B	209	LYS	3.0
2	B	321	ILE	3.0
2	B	273	LYS	3.0
1	A	474	HIS	2.9
1	A	508	ARG	2.8
2	B	181	GLU	2.8
2	B	133	PHE	2.8
1	A	468	ARG	2.7
2	B	275	LEU	2.7
2	B	311	ILE	2.7
2	B	121	GLN	2.7
1	A	490	ASN	2.6
1	A	446	LEU	2.6
2	B	384	TYR	2.6
2	B	123	PHE	2.6
2	B	389	THR	2.5
1	A	509	SER	2.5
1	A	400	ILE	2.4
2	B	126	THR	2.4
1	A	557	LEU	2.4
2	B	256	CYS	2.3
1	A	464	GLN	2.3
1	A	368	LEU	2.3
2	B	137	VAL	2.2
1	A	466	ILE	2.2
1	A	554	ILE	2.2
1	A	469	THR	2.2
2	B	154	ARG	2.1
2	B	313	LEU	2.1
2	B	258	ASP	2.1
1	A	571	ASP	2.0
1	A	496	GLN	2.0
2	B	201	GLU	2.0
1	A	511	SER	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

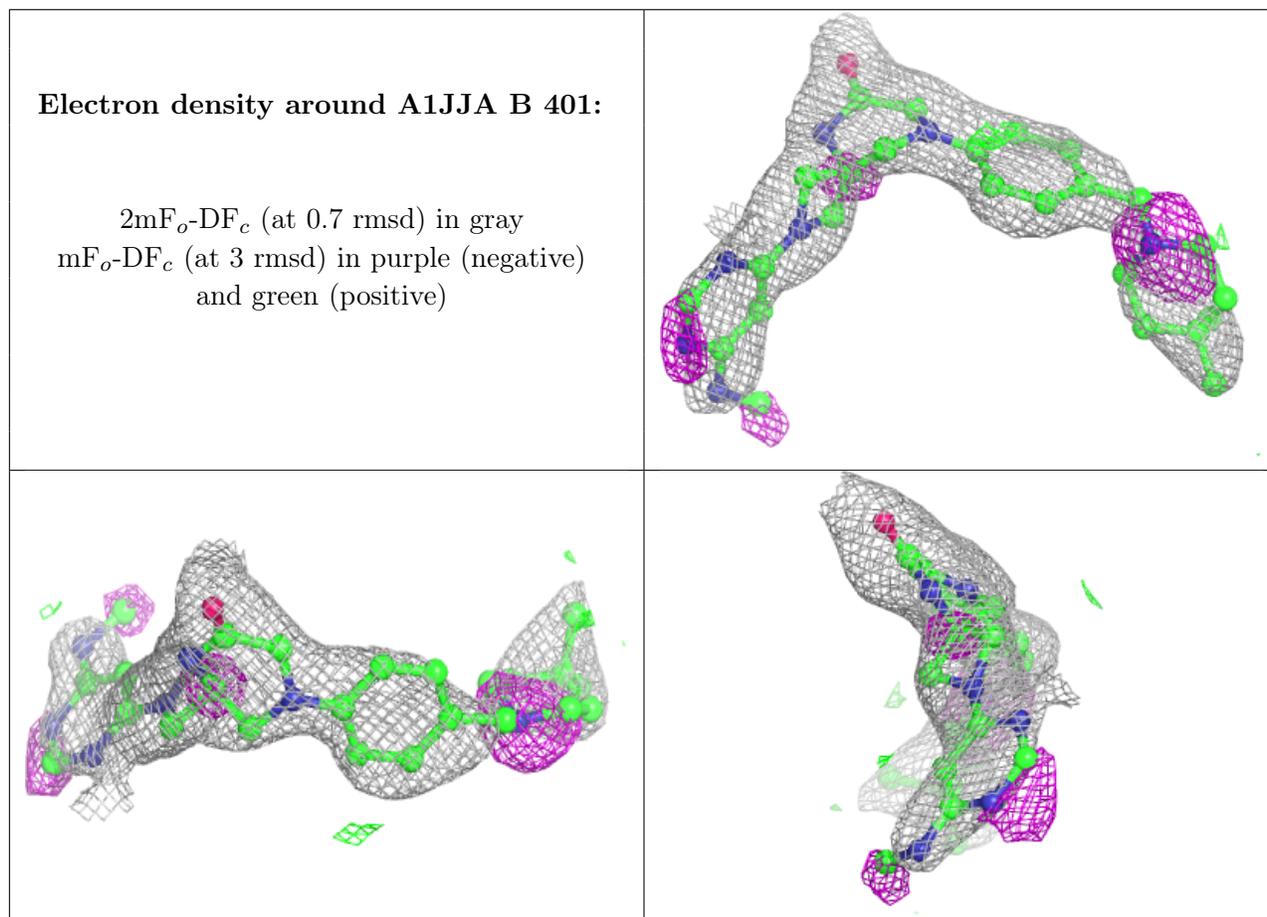There are no non-standard protein/DNA/RNA residues in this entry.

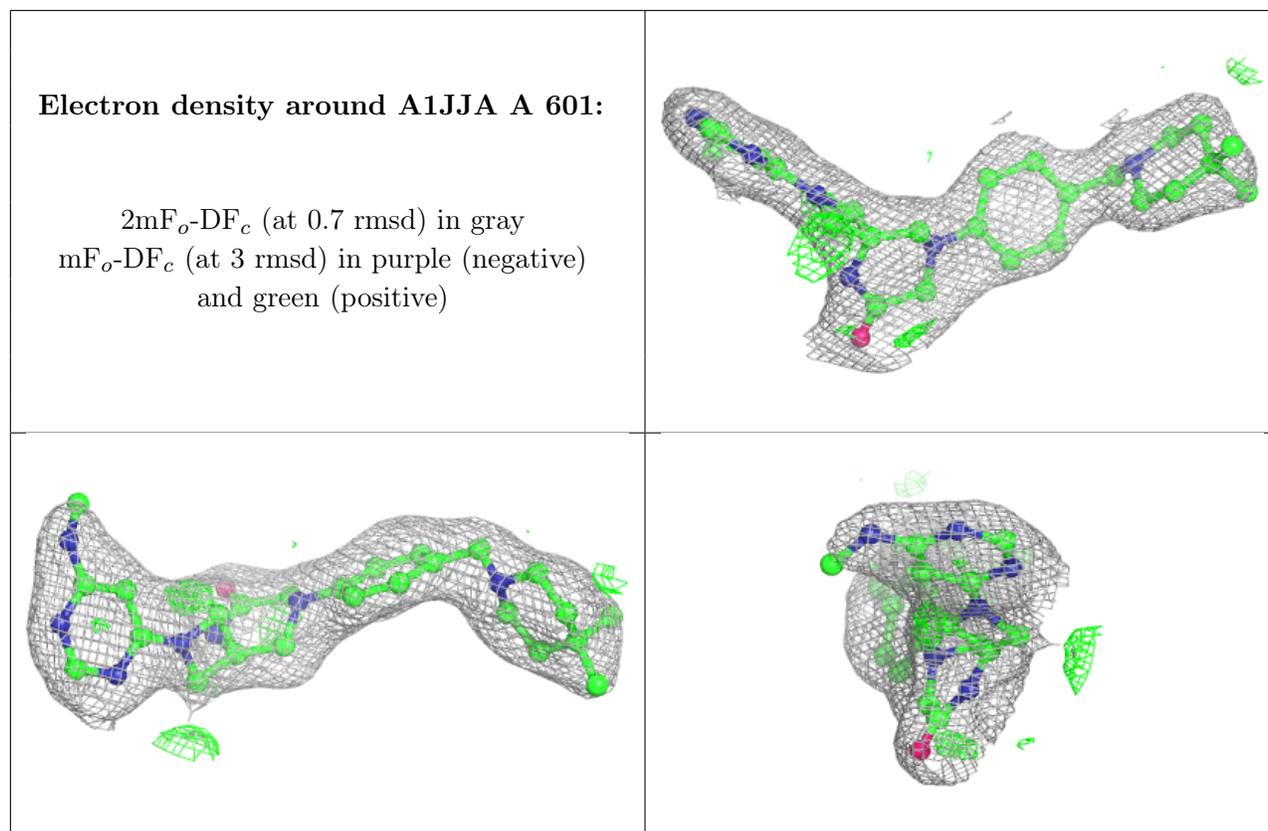## 6.3　Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4　Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. 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	A1JJA	B	401	33/33	0.77	0.19	54,63,70,73	0
3	A1JJA	A	601	33/33	0.90	0.13	51,57,67,71	0
4	ACT	B	402	4/4	0.93	0.13	37,39,44,49	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 A1JJA B 401:

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

Electron density around A1JJA A 601:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.