Full wwPDB X-ray Structure Validation Report (i)

Apr 14, 2026 – 01:25 pm BST

PDB ID	:	9Q89 / pdb_00009q89
Title	:	Crystal structure of the human METTL3-METTL14 in complex with small molecule inhibitor Compound 13
Authors	:	Dutheuil, G.; Oukoloff, K.
Deposited on	:	2025-02-24
Resolution	:	1.95 Å(reported)

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

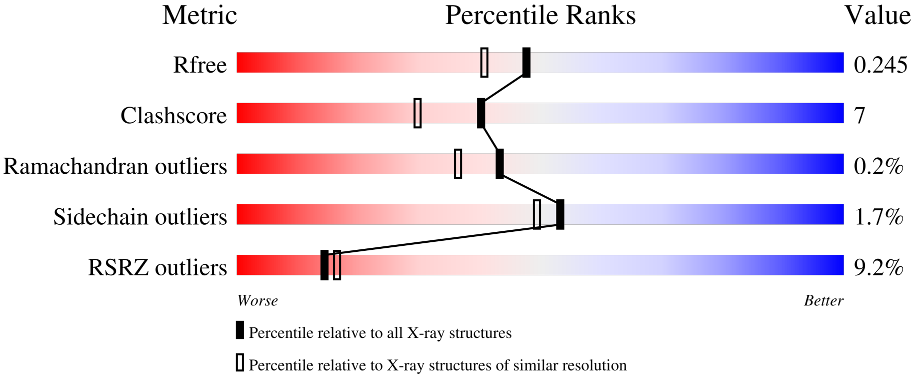
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance (i)

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

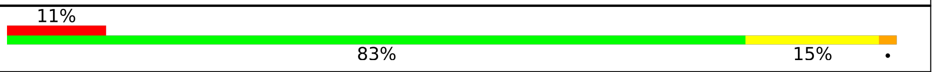
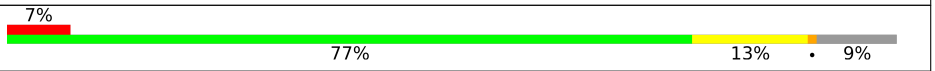
The reported resolution of this entry is 1.95 Å.

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}	180053	3494 (1.96-1.96)
Clashscore	190562	3612 (1.96-1.96)
Ramachandran outliers	187476	3587 (1.96-1.96)
Sidechain outliers	187428	3587 (1.96-1.96)
RSRZ outliers	180081	3495 (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 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	213	
2	B	280	

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 4172 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.

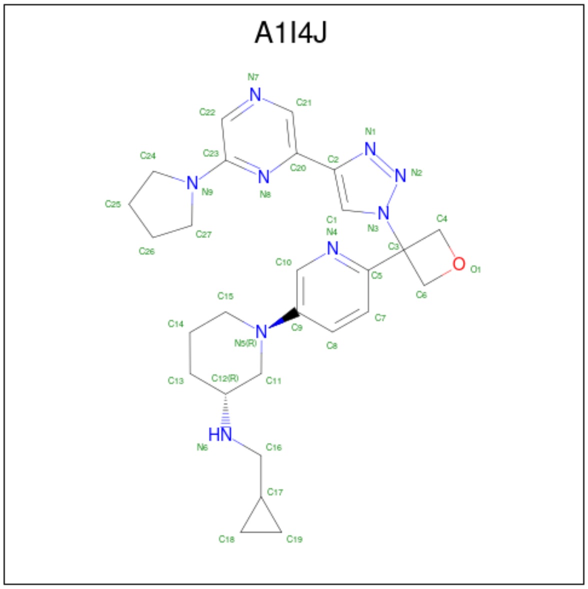
- Molecule 1 is a protein called N6-adenosine-methyltransferase catalytic subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	213	1749	1122	309	307	11	0	4	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	254	2136	1360	373	389	14	0	7	0

- Molecule 3 is (3 {R})- {N}-(cyclopropylmethyl)-1-[6-[3-[4-(6-pyrrolidin-1-ylpyrazin-2-yl)-1,2,3-triazol-1-yl]oxetan-3-yl]pyridin-3-yl]piperidin-3-amine (CCD ID: A1I4J) (formula: $C_{27}H_{35}N_9O$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
3	A	1	37	27	9	1	0	0

- Molecule 4 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	2	Total Ca 2 2	0	0
4	B	2	Total Ca 2 2	0	0

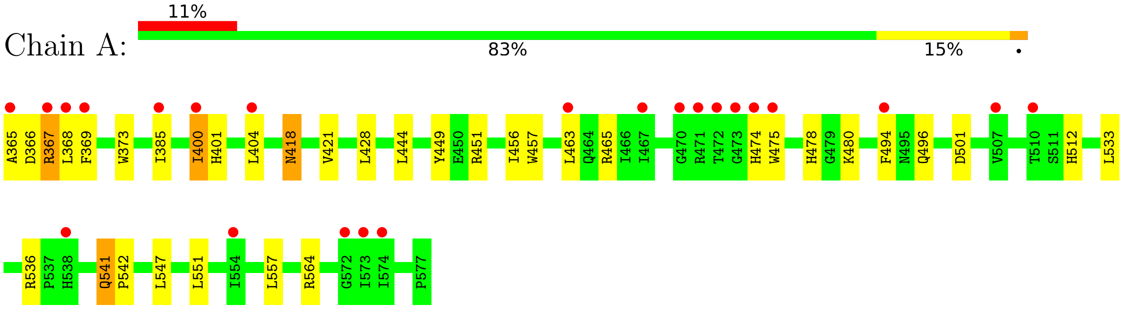
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	98	Total O 98 98	0	0
5	B	148	Total O 148 148	0	0

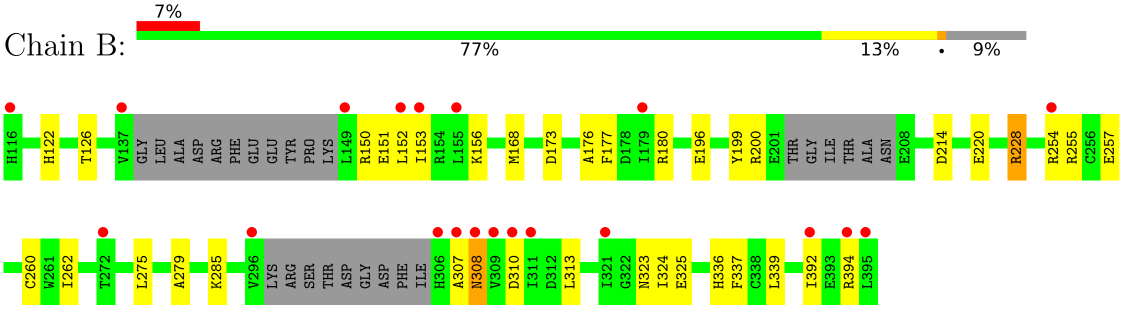
3 Residue-property plots ⓘ

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



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



4 Data and refinement statistics

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	64.53Å 64.53Å 226.61Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	44.93 – 1.95 44.93 – 1.95	Depositor EDS
% Data completeness (in resolution range)	99.6 (44.93-1.95) 99.6 (44.93-1.95)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.56 (at 1.95Å)	Xtriage
Refinement program	REFMAC 5.8.0352	Depositor
R, R_{free}	0.190 , 0.238 0.200 , 0.245	Depositor DCC
R_{free} test set	1965 reflections (4.79%)	wwPDB-VP
Wilson B-factor (Å^2)	41.5	Xtriage
Anisotropy	0.041	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 44.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.022 for -h,-k,l	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	4172	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 3.63% 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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: A1I4J, CA

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	0.64	2/1805 (0.1%)	0.98	5/2453 (0.2%)
2	B	0.62	0/2202	0.97	2/2976 (0.1%)
All	All	0.63	2/4007 (0.0%)	0.98	7/5429 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3
2	B	0	5
All	All	0	8

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	474	HIS	CE1-NE2	5.05	1.37	1.32
1	A	401	HIS	CE1-NE2	5.00	1.37	1.32

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	214	ASP	CA-CB-CG	8.05	120.65	112.60
1	A	418	ASN	CA-C-N	6.20	124.15	120.24
1	A	418	ASN	C-N-CA	6.20	124.15	120.24
1	A	541	GLN	CB-CG-CD	-6.01	102.38	112.60
1	A	541	GLN	N-CA-C	5.94	113.36	108.07
1	A	501	ASP	CA-CB-CG	5.21	117.81	112.60
2	B	177	PHE	CA-CB-CG	5.05	118.85	113.80

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	367	ARG	Sidechain
1	A	451	ARG	Sidechain
1	A	465	ARG	Sidechain
2	B	150	ARG	Sidechain
2	B	228	ARG	Sidechain
2	B	254[B]	ARG	Sidechain
2	B	255	ARG	Sidechain
2	B	394	ARG	Sidechain

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	1749	0	1740	29	0
2	B	2136	0	2102	26	0
3	A	37	0	0	0	0
4	A	2	0	0	0	0
4	B	2	0	0	0	0
5	A	98	0	0	1	0
5	B	148	0	0	4	0
All	All	4172	0	3842	51	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 (51) 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:428:LEU:HD23	1:A:444[A]:LEU:CD2	1.98	0.93
1:A:494[B]:PHE:H	1:A:494[B]:PHE:HD1	1.23	0.85
2:B:173[A]:ASP:OD2	5:B:501:HOH:O	1.99	0.81
2:B:310:ASP:OD2	2:B:336[A]:HIS:HD2	1.79	0.66
1:A:428:LEU:CD2	1:A:444[A]:LEU:CD2	2.73	0.64
2:B:260[B]:CYS:SG	2:B:285:LYS:HD2	2.38	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:156:LYS:HE2	2:B:336[B]:HIS:ND1	2.14	0.62
2:B:262:ILE:HD12	2:B:313:LEU:HD22	1.82	0.61
1:A:533:LEU:HD22	1:A:547:LEU:HD12	1.85	0.58
1:A:367:ARG:O	1:A:368:LEU:HD23	2.04	0.58
2:B:152:LEU:HD23	2:B:153:ILE:N	2.18	0.58
1:A:541:GLN:HB2	1:A:542:PRO:HD2	1.84	0.58
1:A:428:LEU:HD23	1:A:444[A]:LEU:HD21	1.83	0.57
2:B:310:ASP:OD2	2:B:336[A]:HIS:CD2	2.58	0.57
1:A:512:HIS:CD2	1:A:536:ARG:HD2	2.42	0.55
2:B:262:ILE:CD1	2:B:313:LEU:HD22	2.38	0.54
2:B:168[B]:MET:HE2	5:B:556:HOH:O	2.07	0.54
1:A:365:ALA:HA	5:A:778:HOH:O	2.08	0.53
2:B:325:GLU:HG2	5:B:509:HOH:O	2.08	0.53
2:B:180[B]:ARG:HH22	2:B:220:GLU:HG3	1.74	0.53
2:B:152:LEU:HD23	2:B:152:LEU:C	2.33	0.52
1:A:494[B]:PHE:CE2	1:A:496:GLN:CD	2.87	0.52
1:A:541:GLN:HB2	1:A:542:PRO:CD	2.39	0.52
2:B:228:ARG:HG2	2:B:228:ARG:HH11	1.75	0.51
1:A:480:LYS:HD3	2:B:313:LEU:HD21	1.95	0.48
1:A:478:HIS:HE1	2:B:257:GLU:OE1	1.97	0.48
1:A:373:TRP:HB2	1:A:551:LEU:HD13	1.95	0.48
2:B:199:TYR:OH	2:B:324:ILE:HD13	2.13	0.48
1:A:428:LEU:CD2	1:A:444[A]:LEU:HD23	2.43	0.47
1:A:428:LEU:HD23	1:A:444[A]:LEU:HD23	1.92	0.46
1:A:418:ASN:O	1:A:421:VAL:HG12	2.16	0.46
1:A:512:HIS:NE2	1:A:536:ARG:HD2	2.30	0.46
2:B:275:LEU:HG	2:B:279:ALA:HB3	1.97	0.46
2:B:122:HIS:CE1	2:B:126:THR:HG21	2.52	0.45
1:A:444[B]:LEU:HD23	1:A:449:TYR:O	2.16	0.45
2:B:323:ASN:OD1	2:B:323:ASN:C	2.59	0.45
2:B:392:ILE:HG23	5:B:645:HOH:O	2.17	0.44
1:A:428:LEU:HD23	1:A:444[A]:LEU:HD22	1.93	0.43
1:A:456:ILE:HD11	2:B:262:ILE:HD11	2.00	0.43
1:A:457:TRP:O	1:A:480:LYS:HA	2.19	0.42
2:B:173[B]:ASP:C	2:B:173[B]:ASP:OD1	2.62	0.42
2:B:337:PHE:HB3	2:B:339:LEU:HD21	2.02	0.41
2:B:173[B]:ASP:OD1	2:B:173[B]:ASP:O	2.38	0.41
1:A:369:PHE:HE1	1:A:557:LEU:HB2	1.85	0.41
1:A:475:TRP:O	2:B:308:ASN:ND2	2.47	0.41
1:A:444[A]:LEU:HD23	1:A:444[A]:LEU:HA	1.82	0.40
1:A:385:ILE:O	1:A:564:ARG:HD2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:173[B]:ASP:OD1	2:B:176:ALA:HB3	2.22	0.40
1:A:400:ILE:HG22	1:A:404:LEU:HD11	2.02	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	215/213 (101%)	207 (96%)	8 (4%)	0	100	100
2	B	253/280 (90%)	243 (96%)	9 (4%)	1 (0%)	30	21
All	All	468/493 (95%)	450 (96%)	17 (4%)	1 (0%)	43	36

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	307	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	192/188 (102%)	189 (98%)	3 (2%)	55	52
2	B	236/250 (94%)	232 (98%)	4 (2%)	53	49
All	All	428/438 (98%)	421 (98%)	7 (2%)	53	52

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

Mol	Chain	Res	Type
1	A	366	ASP
1	A	400	ILE
1	A	463	LEU
2	B	151	GLU
2	B	196	GLU
2	B	200	ARG
2	B	308	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	423	GLN
1	A	474	HIS
1	A	478	HIS
1	A	541	GLN
1	A	550	GLN
1	A	555	HIS
2	B	122	HIS
2	B	267	ASN
2	B	268	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 ⓘ

Of 5 ligands modelled in this entry, 4 are 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).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	A1I4J	A	601	-	39,43,43	0.59	0	48,62,62	1.21	6 (12%)

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	A1I4J	A	601	-	-	0/17/56/56	0/7/7/7

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	601	A1I4J	C6-C3-N3	-3.96	107.03	115.18
3	A	601	A1I4J	C11-N5-C9	3.15	123.47	116.34
3	A	601	A1I4J	C4-C3-N3	-2.39	110.25	115.18
3	A	601	A1I4J	N3-N2-N1	-2.35	105.48	107.02
3	A	601	A1I4J	N8-C23-N9	2.33	119.16	116.55
3	A	601	A1I4J	C15-N5-C9	2.25	124.17	118.09

There are no chirality outliers.

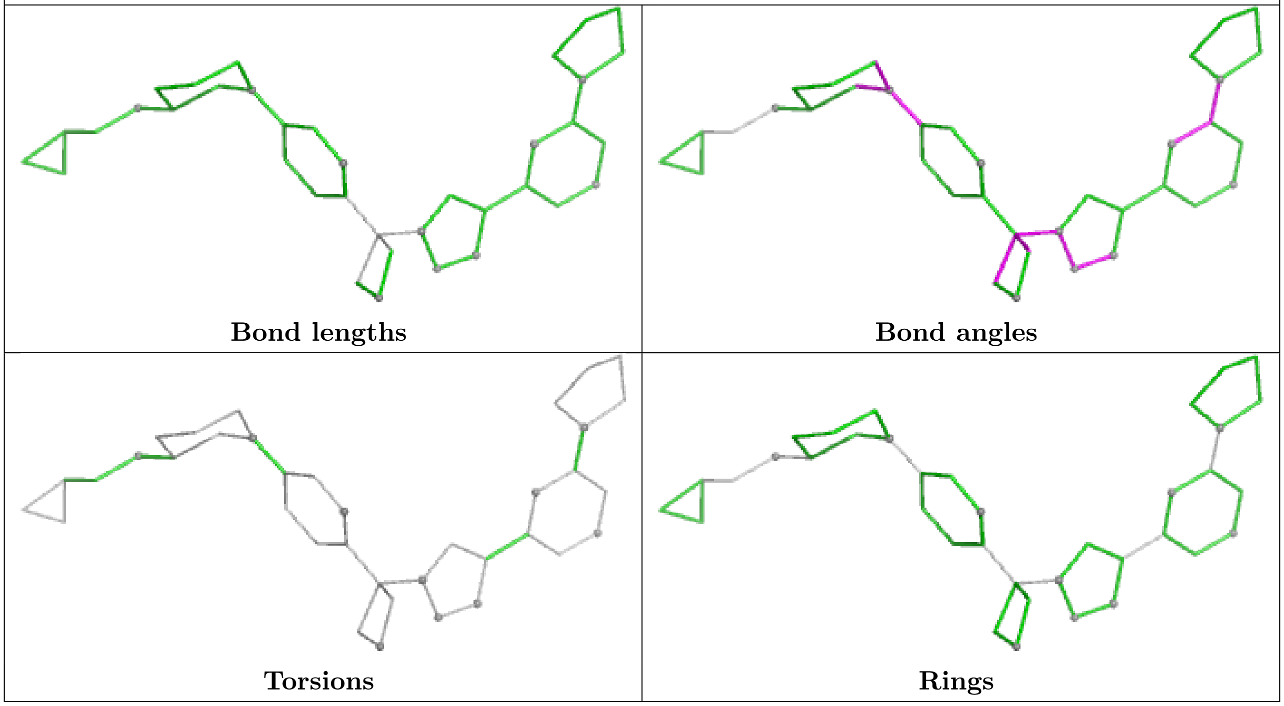
There are no torsion outliers.

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 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 A1I4J 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(Å^2)	Q<0.9
1	A	213/213 (100%)	0.59	23 (10%)	11	12	19, 47, 98, 125	4 (1%)
2	B	254/280 (90%)	0.47	20 (7%)	18	21	20, 41, 104, 123	7 (2%)
All	All	467/493 (94%)	0.53	43 (9%)	14	16	19, 44, 103, 125	11 (2%)

All (43) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	137	VAL	6.4
2	B	309	VAL	5.7
2	B	149	LEU	5.7
1	A	368	LEU	5.3
1	A	573	ILE	4.5
2	B	152	LEU	4.1
1	A	365	ALA	4.1
2	B	254[B]	ARG	4.0
2	B	296	VAL	4.0
1	A	507	VAL	3.9
1	A	510	THR	3.7
2	B	153	ILE	3.7
1	A	475	TRP	3.2
1	A	400	ILE	3.1
1	A	369	PHE	3.0
2	B	395	LEU	2.9
1	A	494[A]	PHE	2.9
2	B	307	ALA	2.8
2	B	321	ILE	2.7
2	B	116	HIS	2.6
2	B	392	ILE	2.6
1	A	472	THR	2.6
2	B	394	ARG	2.5
2	B	308	ASN	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	385	ILE	2.5
1	A	470	GLY	2.4
2	B	272	THR	2.4
1	A	471	ARG	2.4
2	B	155	LEU	2.4
1	A	367	ARG	2.2
2	B	306	HIS	2.2
2	B	310	ASP	2.2
1	A	404	LEU	2.2
1	A	474	HIS	2.2
1	A	463	LEU	2.2
1	A	538	HIS	2.1
1	A	574	ILE	2.1
1	A	473	GLY	2.1
1	A	467	ILE	2.1
1	A	572	GLY	2.1
2	B	311	ILE	2.1
1	A	554	ILE	2.0
2	B	179	ILE	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
4	CA	A	603	1/1	0.85	0.10	88,88,88,88	0
4	CA	B	401	1/1	0.89	0.11	96,96,96,96	0
4	CA	A	602	1/1	0.92	0.08	81,81,81,81	0
3	A1I4J	A	601	37/37	0.93	0.09	40,45,54,57	0

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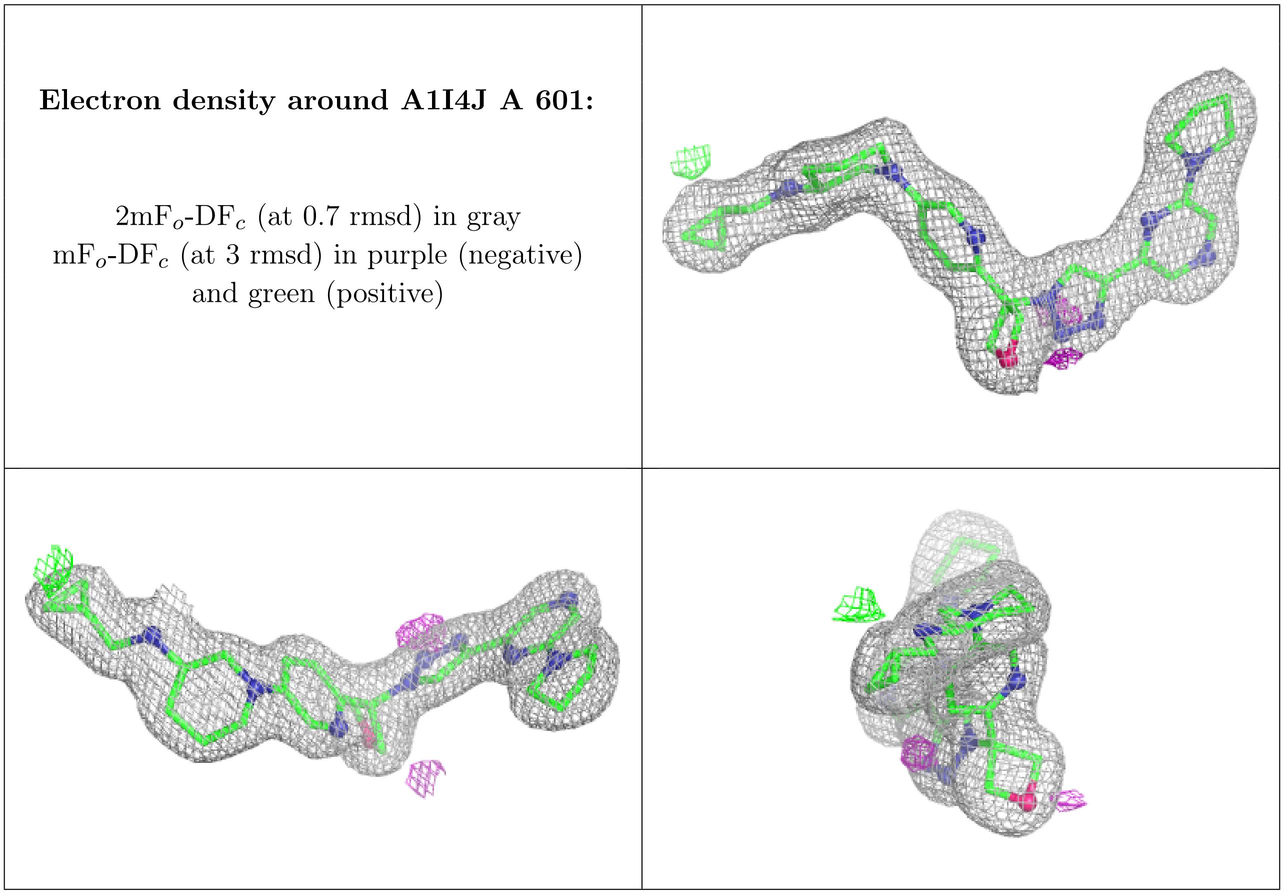
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\AA^2$)	Q<0.9
4	CA	B	402	1/1	0.94	0.14	53,53,53,53	0

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 A1I4J A 601:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers

There are no such residues in this entry.