



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 3, 2026 – 01:31 pm GMT

PDB ID : 9RJM / pdb\_00009rjm  
Title : Structure of Mycobacterium tuberculosis InhA in complex with pyridomycin derivative EP196 (compound 13)  
Authors : Publicola, G.; Mourey, L.; Valderrama, K.; Hartkoorn, R.; Maveyraud, L.  
Deposited on : 2025-06-12  
Resolution : 1.99 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](mailto: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>.

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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)	:	2.47

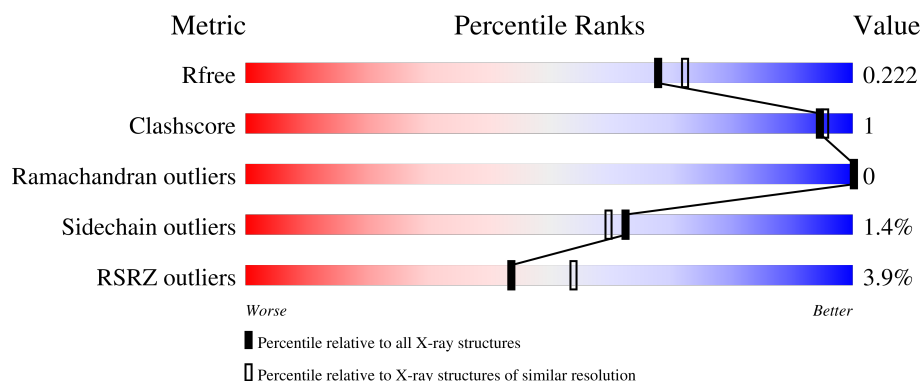
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 1.99 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	1356 (1.98-1.98)
Clashscore	180529	1437 (1.98-1.98)
Ramachandran outliers	177936	1426 (1.98-1.98)
Sidechain outliers	177891	1426 (1.98-1.98)
RSRZ outliers	164620	1356 (1.98-1.98)

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  $\geq 3$ , 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	272	<div> <div>3%</div> <div>92%</div> <div>5%</div> <div>.</div> </div>
1	B	272	<div> <div>3%</div> <div>89%</div> <div>6%</div> <div>6%</div> </div>
1	C	272	<div> <div>6%</div> <div>90%</div> <div>.</div> <div>6%</div> </div>
1	D	272	<div> <div>4%</div> <div>93%</div> <div>.</div> <div>5%</div> </div>
1	E	272	<div> <div>3%</div> <div>90%</div> <div>.</div> <div>6%</div> </div>

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Mol	Chain	Length	Quality of chain
1	F	272	<div><div></div><div>4%</div><div></div><div>92%</div><div></div><div>6%</div></div>

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 12576 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 Enoyl-[acyl-carrier-protein] reductase [NADH].

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	264	Total	C	N	O	S	0	3	0
			1985	1255	347	373	10			
1	B	257	Total	C	N	O	S	0	4	0
			1909	1207	331	361	10			
1	C	257	Total	C	N	O	S	0	1	0
			1895	1202	327	356	10			
1	D	258	Total	C	N	O	S	0	2	0
			1904	1204	328	363	9			
1	E	256	Total	C	N	O	S	0	1	0
			1900	1202	330	359	9			
1	F	256	Total	C	N	O	S	0	2	0
			1889	1198	327	353	11			

There are 18 discrepancies between the modelled and reference sequences:

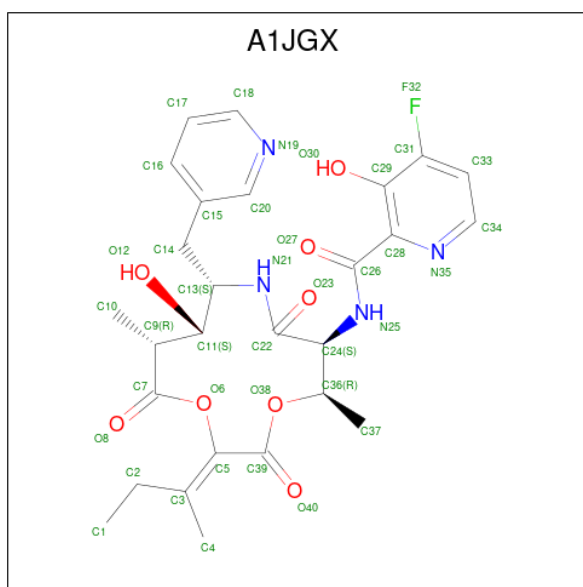
Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	expression tag	UNP P9WGR1
A	-1	SER	-	expression tag	UNP P9WGR1
A	0	HIS	-	expression tag	UNP P9WGR1
B	-2	GLY	-	expression tag	UNP P9WGR1
B	-1	SER	-	expression tag	UNP P9WGR1
B	0	HIS	-	expression tag	UNP P9WGR1
C	-2	GLY	-	expression tag	UNP P9WGR1
C	-1	SER	-	expression tag	UNP P9WGR1
C	0	HIS	-	expression tag	UNP P9WGR1
D	-2	GLY	-	expression tag	UNP P9WGR1
D	-1	SER	-	expression tag	UNP P9WGR1
D	0	HIS	-	expression tag	UNP P9WGR1
E	-2	GLY	-	expression tag	UNP P9WGR1
E	-1	SER	-	expression tag	UNP P9WGR1
E	0	HIS	-	expression tag	UNP P9WGR1
F	-2	GLY	-	expression tag	UNP P9WGR1
F	-1	SER	-	expression tag	UNP P9WGR1

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Chain	Residue	Modelled	Actual	Comment	Reference
F	0	HIS	-	expression tag	UNP P9WGR1

- Molecule 2 is {N}-[(2 {Z},5 {R},6 {S},9 {S},10 {S},11 {R})-2-butan-2-ylidene-5,11-dimethyl-10-oxidanyl-3,7,12-tris(oxidanylidene)-9-(pyridin-3-ylmethyl)-1,4-dioxo-8-azacyclododec-6-yl]-4-fluoranyl-3-oxidanyl-pyridine-2-carboxamide (CCD ID: A1JGX) (formula: C<sub>27</sub>H<sub>31</sub>FN<sub>4</sub>O<sub>8</sub>).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	F	N	O	0	0
			40	27	1	4	8		
2	B	1	Total	C	F	N	O	0	0
			40	27	1	4	8		
2	C	1	Total	C	F	N	O	0	0
			40	27	1	4	8		
2	D	1	Total	C	F	N	O	0	0
			40	27	1	4	8		
2	E	1	Total	C	F	N	O	0	0
			40	27	1	4	8		
2	F	1	Total	C	F	N	O	0	0
			40	27	1	4	8		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	171	Total	O	0	0
			171	171		

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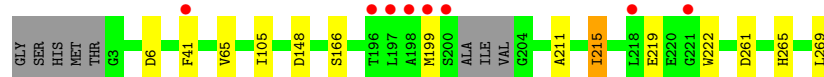
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	190	Total 190	O 190	0	0
3	C	136	Total 136	O 136	0	0
3	D	125	Total 125	O 125	0	0
3	E	110	Total 110	O 110	0	0
3	F	122	Total 122	O 122	0	0

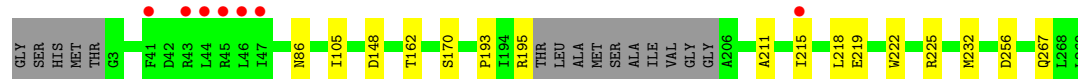
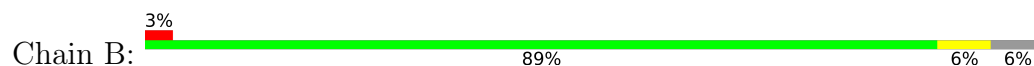
### 3 Residue-property plots [i](#)

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.

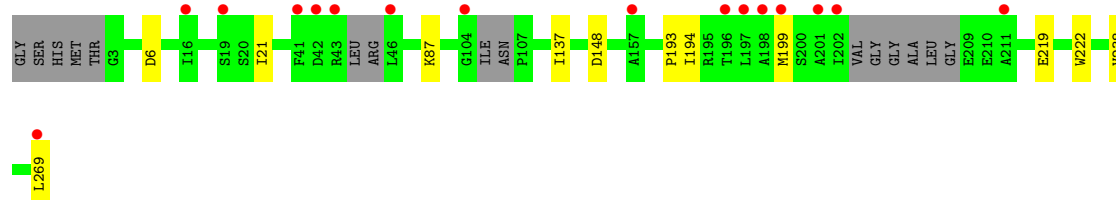
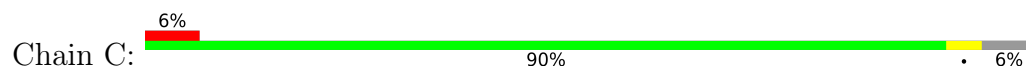
- Molecule 1: Enoyl-[acyl-carrier-protein] reductase [NADH]



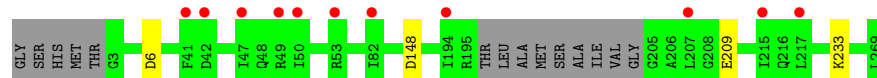
- Molecule 1: Enoyl-[acyl-carrier-protein] reductase [NADH]



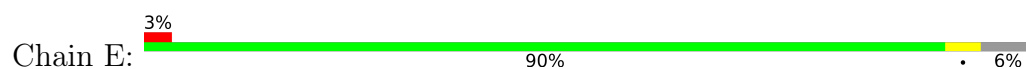
- Molecule 1: Enoyl-[acyl-carrier-protein] reductase [NADH]



- Molecule 1: Enoyl-[acyl-carrier-protein] reductase [NADH]

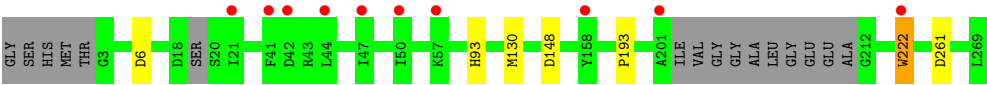


- Molecule 1: Enoyl-[acyl-carrier-protein] reductase [NADH]





● Molecule 1: Enoyl-[acyl-carrier-protein] reductase [NADH]





## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	100.04Å 82.58Å 188.61Å 90.00° 95.94° 90.00°	Depositor
Resolution (Å)	187.60 – 1.99 187.60 – 1.99	Depositor EDS
% Data completeness (in resolution range)	97.3 (187.60-1.99) 97.3 (187.60-1.99)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.03 (at 1.98Å)	Xtriage
Refinement program	BUSTER 2.10.4	Depositor
R, $R_{free}$	0.200 , 0.227 0.195 , 0.222	Depositor DCC
$R_{free}$ test set	5135 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	26.1	Xtriage
Anisotropy	0.376	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 63.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.41$ , $\langle L^2 \rangle = 0.24$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	12576	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	33.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.91% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<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.

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: A1JGX

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	0.77	0/2022	0.99	1/2742 (0.0%)
1	B	0.76	0/1945	0.98	1/2642 (0.0%)
1	C	0.72	0/1929	0.96	1/2617 (0.0%)
1	D	0.68	0/1940	0.99	1/2636 (0.0%)
1	E	0.69	0/1935	0.98	2/2627 (0.1%)
1	F	0.68	0/1925	0.97	1/2614 (0.0%)
All	All	0.72	0/11696	0.98	7/15878 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	18	ASP	CA-CB-CG	7.10	119.70	112.60
1	F	148	ASP	CA-CB-CG	6.00	118.60	112.60
1	B	148	ASP	CA-CB-CG	5.87	118.47	112.60
1	E	148	ASP	CA-CB-CG	5.85	118.45	112.60
1	A	148	ASP	CA-CB-CG	5.83	118.43	112.60
1	D	148	ASP	CA-CB-CG	5.56	118.16	112.60
1	C	148	ASP	CA-CB-CG	5.38	117.98	112.60

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	1985	0	1987	6	1
1	B	1909	0	1877	8	1
1	C	1895	0	1888	8	0
1	D	1904	0	1877	1	0
1	E	1900	0	1887	3	0
1	F	1889	0	1862	4	0
2	A	40	0	0	1	0
2	B	40	0	0	0	0
2	C	40	0	0	2	0
2	D	40	0	0	0	0
2	E	40	0	0	0	0
2	F	40	0	0	0	0
3	A	171	0	0	0	0
3	B	190	0	0	0	0
3	C	136	0	0	0	0
3	D	125	0	0	0	0
3	E	110	0	0	0	0
3	F	122	0	0	0	0
All	All	12576	0	11378	28	1

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 1.

All (28) 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:B:195:ARG:HG2	1:B:232[B]:MET:HE2	1.72	0.71
1:C:199:MET:HE3	1:C:219:GLU:OE2	1.99	0.62
1:C:21:ILE:HD11	1:C:194:ILE:HG13	1.83	0.59
1:C:87:LYS:HZ2	1:C:137:ILE:HA	1.67	0.59
1:A:265:HIS:HE1	1:B:256:ASP:OD2	1.90	0.54
1:B:219:GLU:HB3	1:B:232[A]:MET:SD	2.48	0.53
1:C:21:ILE:HD13	1:C:238:VAL:HG11	1.91	0.53
1:C:87:LYS:NZ	1:C:137:ILE:HA	2.23	0.52
1:F:222:TRP:HE1	1:F:261:ASP:HB2	1.76	0.50
1:F:93:HIS:HD2	1:F:130[B]:MET:HE3	1.81	0.45
1:B:225:ARG:HD2	1:B:267:GLN:O	2.18	0.44
1:E:105:ILE:HG22	1:E:211:ALA:HB2	1.99	0.44
1:C:199:MET:SD	2:C:301:A1JGX:O12	2.76	0.44
1:A:215:ILE:O	1:A:219:GLU:HG3	2.19	0.42
1:F:193:PRO:HD3	1:F:222:TRP:CE2	2.55	0.42
1:C:199:MET:SD	2:C:301:A1JGX:O8	2.77	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:105:ILE:HG22	1:A:211:ALA:HB2	2.02	0.41
1:A:199:MET:SD	2:A:301:A1JGX:O8	2.78	0.41
1:B:105:ILE:HG22	1:B:211:ALA:HB2	2.02	0.41
1:B:193:PRO:HD3	1:B:222:TRP:CE2	2.56	0.41
1:B:215:ILE:O	1:B:219:GLU:HG3	2.20	0.41
1:E:193:PRO:HD3	1:E:222:TRP:CE2	2.56	0.41
1:C:193:PRO:HD3	1:C:222:TRP:CE2	2.55	0.40
1:A:41:PHE:CZ	1:A:65:VAL:HG22	2.57	0.40
1:F:193:PRO:HD3	1:F:222:TRP:CD2	2.57	0.40
1:A:222:TRP:HE1	1:A:261:ASP:HB2	1.86	0.40
1:B:86:ASN:HD21	1:D:233:LYS:NZ	2.20	0.40
1:E:215:ILE:HD13	1:E:215:ILE:HA	1.95	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:166:SER:OG	1:B:170[B]:SER:OG[2_556]	2.19	0.01

## 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	263/272 (97%)	254 (97%)	9 (3%)	0	100	100
1	B	257/272 (94%)	249 (97%)	8 (3%)	0	100	100
1	C	250/272 (92%)	242 (97%)	8 (3%)	0	100	100
1	D	256/272 (94%)	248 (97%)	8 (3%)	0	100	100
1	E	251/272 (92%)	244 (97%)	7 (3%)	0	100	100
1	F	252/272 (93%)	244 (97%)	8 (3%)	0	100	100
All	All	1529/1632 (94%)	1481 (97%)	48 (3%)	0	100	100

There are no Ramachandran outliers to report.

### 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	202/207 (98%)	199 (98%)	3 (2%)	60	56
1	B	190/207 (92%)	188 (99%)	2 (1%)	70	68
1	C	191/207 (92%)	189 (99%)	2 (1%)	73	72
1	D	191/207 (92%)	189 (99%)	2 (1%)	73	72
1	E	192/207 (93%)	187 (97%)	5 (3%)	41	32
1	F	188/207 (91%)	186 (99%)	2 (1%)	70	68
All	All	1154/1242 (93%)	1138 (99%)	16 (1%)	62	60

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	6	ASP
1	A	215	ILE
1	A	269	LEU
1	B	162	THR
1	B	218	LEU
1	C	6	ASP
1	C	269	LEU
1	D	6	ASP
1	D	209	GLU
1	E	6	ASP
1	E	18	ASP
1	E	162	THR
1	E	195	ARG
1	E	269	LEU
1	F	6	ASP
1	F	222	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	48	GLN
1	A	66	GLN
1	A	139	ASN
1	A	265	HIS
1	B	66	GLN
1	B	86	ASN
1	B	139	ASN
1	C	139	ASN
1	D	48	GLN
1	D	66	GLN
1	D	121	HIS
1	D	139	ASN
1	D	265	HIS
1	E	48	GLN
1	E	66	GLN
1	E	139	ASN
1	F	48	GLN
1	F	66	GLN
1	F	139	ASN
1	F	265	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

6 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	$\# Z  > 2$
2	A1JGX	B	301	-	40,42,42	0.24	0	49,59,59	0.94	1 (2%)
2	A1JGX	F	301	-	40,42,42	0.22	0	49,59,59	1.01	2 (4%)
2	A1JGX	E	301	-	40,42,42	0.27	0	49,59,59	0.99	2 (4%)
2	A1JGX	A	301	-	40,42,42	0.23	0	49,59,59	0.94	2 (4%)
2	A1JGX	C	301	-	40,42,42	0.27	0	49,59,59	0.95	1 (2%)
2	A1JGX	D	301	-	40,42,42	0.22	0	49,59,59	0.94	2 (4%)

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	A1JGX	B	301	-	-	11/53/54/54	0/2/3/3
2	A1JGX	F	301	-	-	10/53/54/54	0/2/3/3
2	A1JGX	E	301	-	-	11/53/54/54	0/2/3/3
2	A1JGX	A	301	-	-	10/53/54/54	0/2/3/3
2	A1JGX	C	301	-	-	10/53/54/54	0/2/3/3
2	A1JGX	D	301	-	-	8/53/54/54	0/2/3/3

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	301	A1JGX	C7-O6-C5	5.06	126.37	117.64
2	E	301	A1JGX	C7-O6-C5	4.83	125.97	117.64
2	C	301	A1JGX	C7-O6-C5	4.39	125.22	117.64
2	A	301	A1JGX	C7-O6-C5	4.33	125.10	117.64
2	D	301	A1JGX	C7-O6-C5	4.21	124.90	117.64
2	B	301	A1JGX	C7-O6-C5	4.14	124.78	117.64
2	A	301	A1JGX	C34-C33-C31	-2.19	116.41	118.31
2	D	301	A1JGX	C34-C33-C31	-2.07	116.52	118.31
2	F	301	A1JGX	C34-C33-C31	-2.01	116.57	118.31
2	E	301	A1JGX	C34-C33-C31	-2.01	116.57	118.31

There are no chirality outliers.

All (60) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	301	A1JGX	C22-C24-C36-C37
2	B	301	A1JGX	C22-C24-C36-C37
2	C	301	A1JGX	C13-C11-C9-C7
2	D	301	A1JGX	C22-C24-C36-C37
2	E	301	A1JGX	C22-C24-C36-C37
2	F	301	A1JGX	C22-C24-C36-C37
2	A	301	A1JGX	O27-C26-C28-N35
2	B	301	A1JGX	O27-C26-C28-N35
2	C	301	A1JGX	O27-C26-C28-N35
2	D	301	A1JGX	O27-C26-C28-N35
2	E	301	A1JGX	O27-C26-C28-N35
2	F	301	A1JGX	O27-C26-C28-N35
2	A	301	A1JGX	N25-C26-C28-C29
2	B	301	A1JGX	N25-C26-C28-C29
2	C	301	A1JGX	N25-C26-C28-C29
2	D	301	A1JGX	N25-C26-C28-C29
2	E	301	A1JGX	N25-C26-C28-C29
2	F	301	A1JGX	N25-C26-C28-C29
2	A	301	A1JGX	N25-C26-C28-N35
2	B	301	A1JGX	N25-C26-C28-N35
2	C	301	A1JGX	N25-C26-C28-N35
2	D	301	A1JGX	N25-C26-C28-N35
2	E	301	A1JGX	N25-C26-C28-N35
2	F	301	A1JGX	N25-C26-C28-N35
2	C	301	A1JGX	C22-C24-C36-C37
2	A	301	A1JGX	C22-C24-C36-O38
2	B	301	A1JGX	C22-C24-C36-O38
2	C	301	A1JGX	C22-C24-C36-O38
2	D	301	A1JGX	C22-C24-C36-O38
2	E	301	A1JGX	C22-C24-C36-O38
2	F	301	A1JGX	C22-C24-C36-O38
2	A	301	A1JGX	O8-C7-C9-C11
2	B	301	A1JGX	O8-C7-C9-C11
2	C	301	A1JGX	O8-C7-C9-C11
2	A	301	A1JGX	O27-C26-C28-C29
2	B	301	A1JGX	O27-C26-C28-C29
2	C	301	A1JGX	O27-C26-C28-C29
2	D	301	A1JGX	O27-C26-C28-C29
2	E	301	A1JGX	O27-C26-C28-C29
2	F	301	A1JGX	O27-C26-C28-C29

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Mol	Chain	Res	Type	Atoms
2	A	301	A1JGX	C13-C11-C9-C7
2	B	301	A1JGX	C13-C11-C9-C7
2	D	301	A1JGX	C13-C11-C9-C7
2	E	301	A1JGX	C13-C11-C9-C7
2	F	301	A1JGX	C13-C11-C9-C7
2	D	301	A1JGX	O8-C7-C9-C11
2	E	301	A1JGX	O8-C7-C9-C11
2	F	301	A1JGX	O8-C7-C9-C11
2	B	301	A1JGX	N25-C24-C36-O38
2	E	301	A1JGX	N25-C24-C36-O38
2	A	301	A1JGX	O6-C7-C9-C11
2	B	301	A1JGX	C13-C11-C9-C10
2	C	301	A1JGX	C13-C11-C9-C10
2	B	301	A1JGX	O6-C7-C9-C11
2	C	301	A1JGX	O6-C7-C9-C11
2	E	301	A1JGX	O6-C7-C9-C11
2	F	301	A1JGX	O6-C7-C9-C11
2	A	301	A1JGX	C13-C11-C9-C10
2	E	301	A1JGX	C13-C11-C9-C10
2	F	301	A1JGX	C13-C11-C9-C10

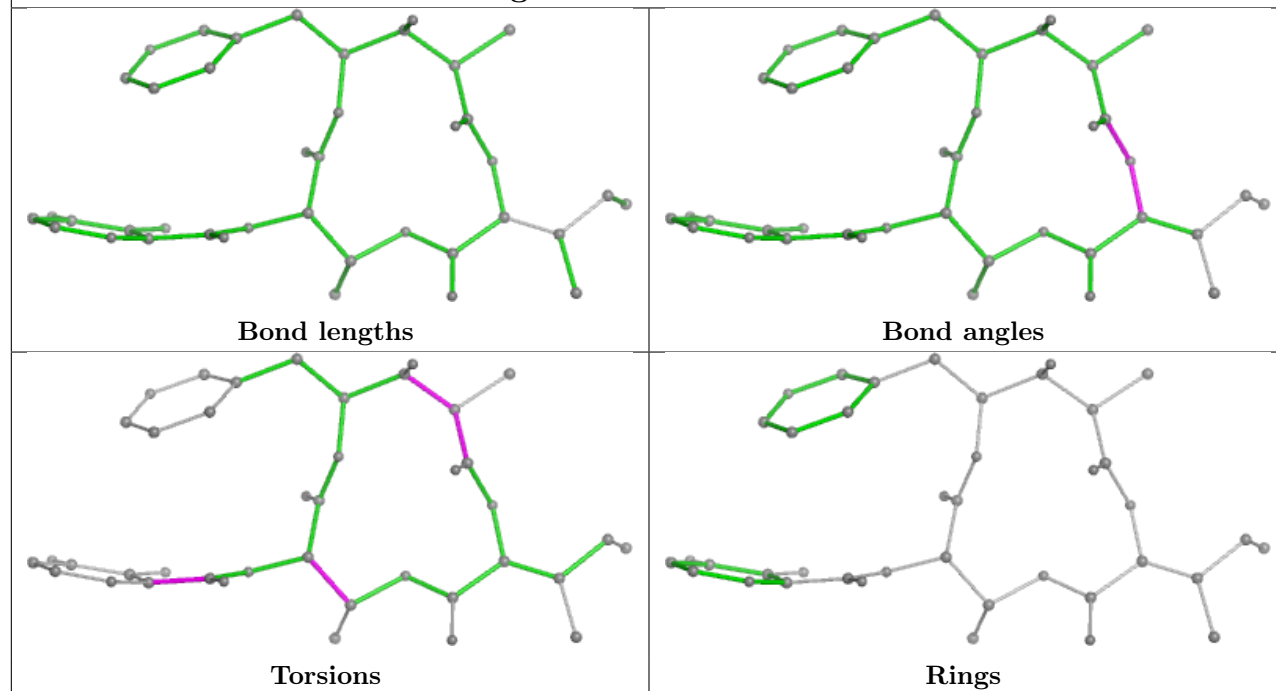
There are no ring outliers.

2 monomers are involved in 3 short contacts:

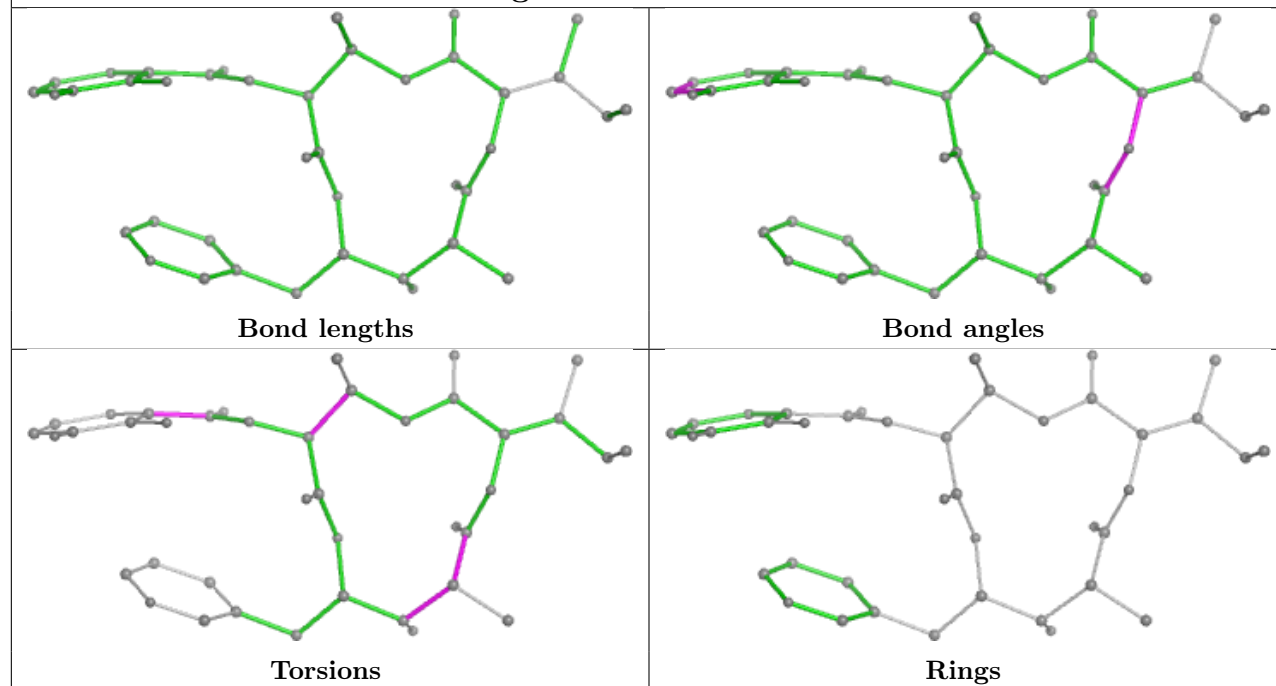
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	301	A1JGX	1	0
2	C	301	A1JGX	2	0

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 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.

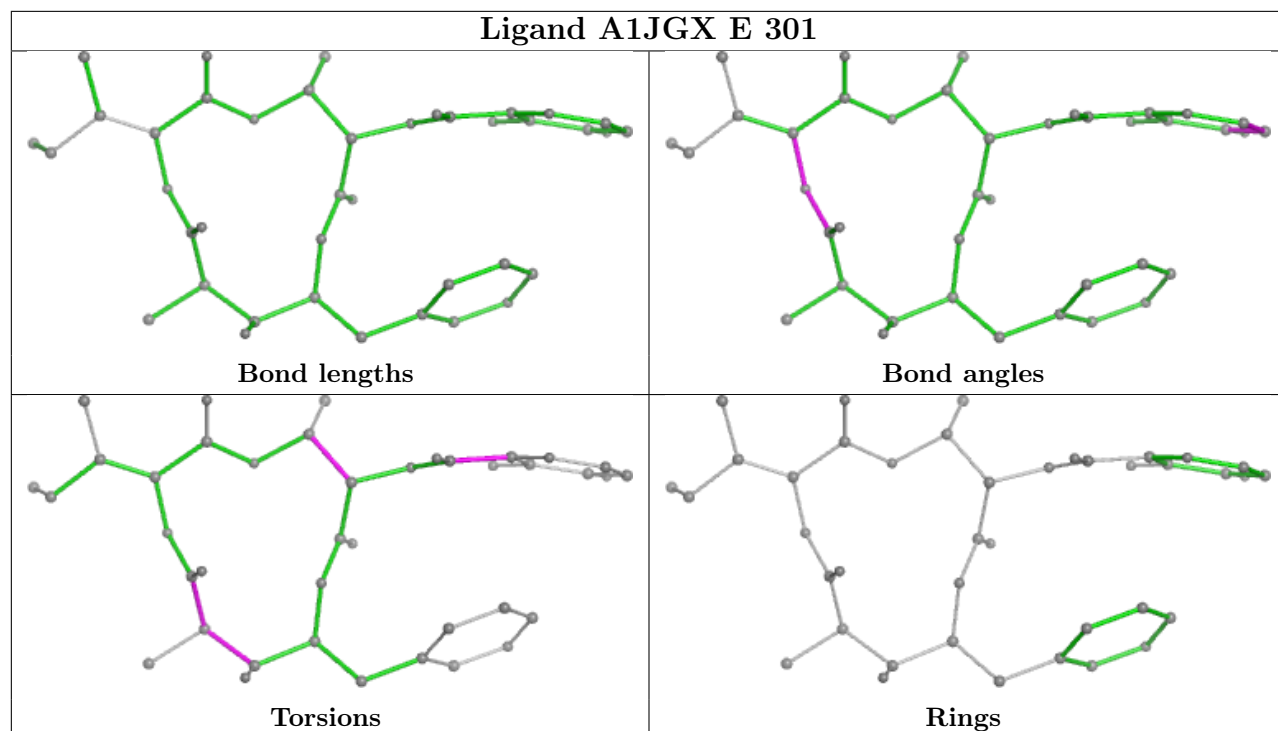
## Ligand A1JGX B 301



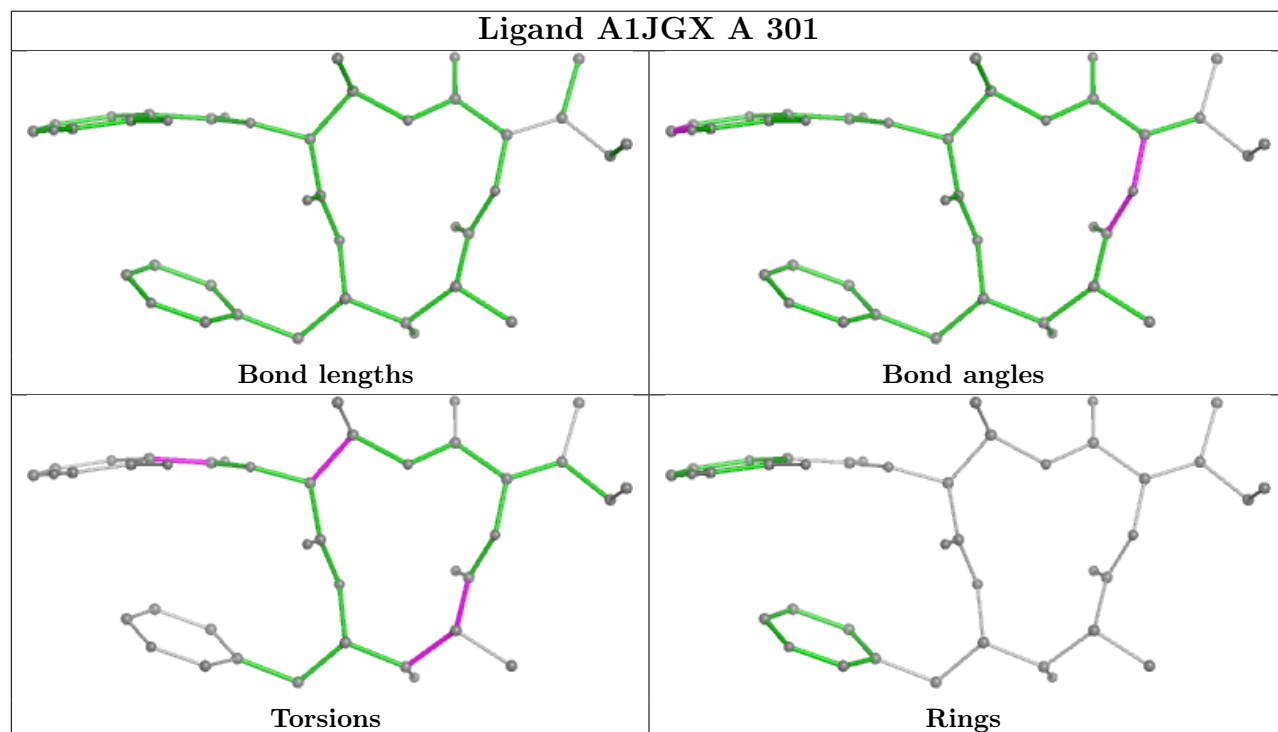
## Ligand A1JGX F 301

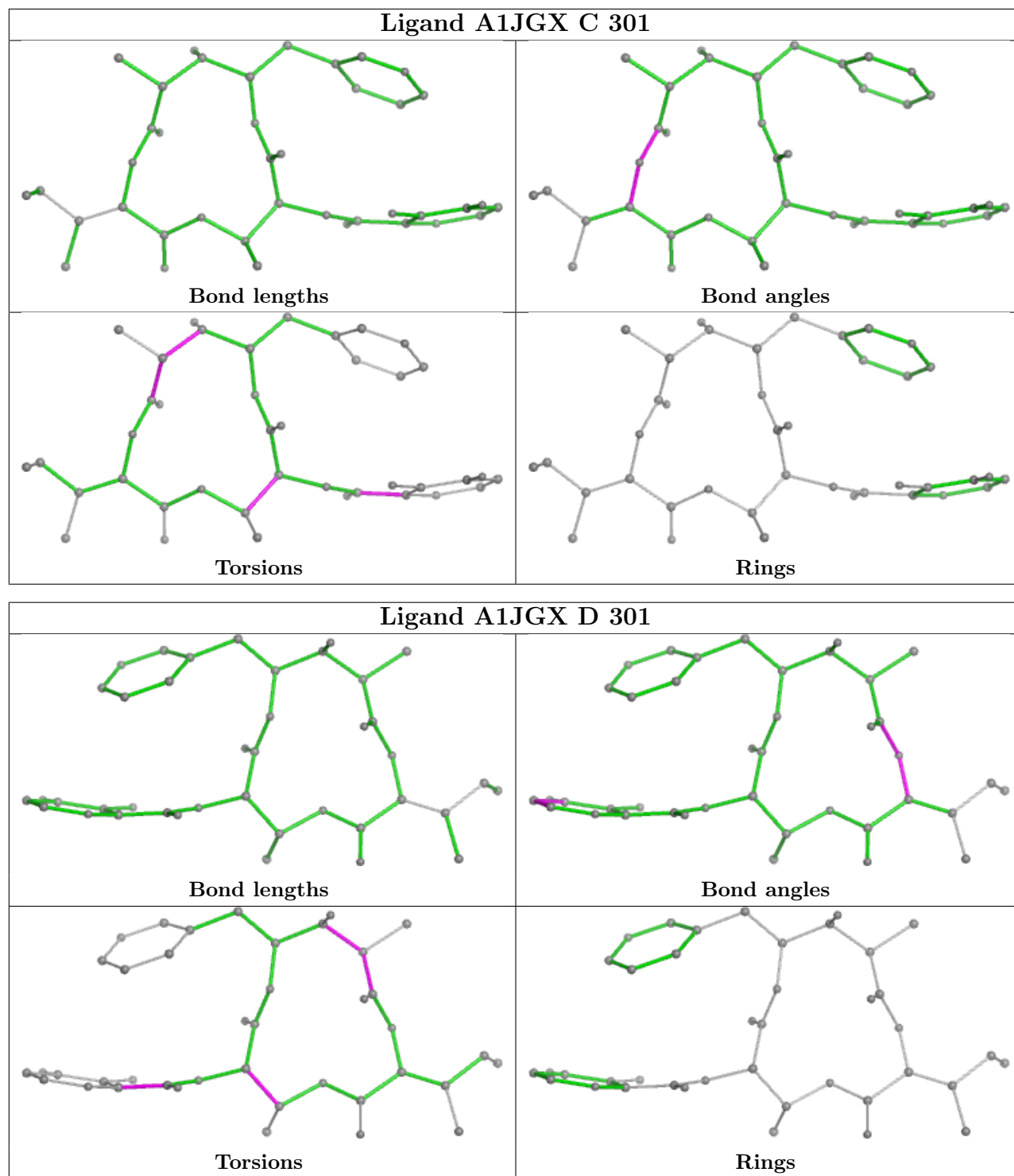


## Ligand A1JGX E 301



## Ligand A1JGX A 301





## 5.7 Other polymers [i](#)

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, 95<sup>th</sup> 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 <sup>2</sup> )	Q < 0.9
1	A	264/272 (97%)	0.01	8 (3%)	52	63	8, 25, 50, 66	3 (1%)
1	B	257/272 (94%)	-0.08	7 (2%)	56	66	7, 23, 46, 63	4 (1%)
1	C	257/272 (94%)	0.37	16 (6%)	28	38	10, 35, 59, 69	1 (0%)
1	D	258/272 (94%)	0.38	11 (4%)	40	51	11, 35, 61, 68	2 (0%)
1	E	256/272 (94%)	0.28	9 (3%)	47	58	11, 34, 58, 74	1 (0%)
1	F	256/272 (94%)	0.34	10 (3%)	44	54	9, 33, 58, 66	2 (0%)
All	All	1548/1632 (94%)	0.22	61 (3%)	44	54	7, 31, 58, 74	13 (0%)

All (61) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	42	ASP	4.4
1	C	269	LEU	4.3
1	C	202	ILE	4.2
1	A	199	MET	4.0
1	B	44	LEU	4.0
1	A	198	ALA	3.7
1	E	269	LEU	3.4
1	C	199	MET	3.3
1	C	104	GLY	3.3
1	A	196	THR	3.2
1	B	47	ILE	3.2
1	A	41	PHE	3.2
1	D	207	LEU	3.1
1	E	44	LEU	3.0
1	E	50	ILE	3.0
1	C	41	PHE	3.0
1	A	197	LEU	3.0
1	F	41	PHE	2.9
1	E	45	ARG	2.9

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Mol	Chain	Res	Type	RSRZ
1	C	46	LEU	2.9
1	C	197	LEU	2.8
1	D	47	ILE	2.7
1	E	47	ILE	2.7
1	F	201	ALA	2.7
1	A	218	LEU	2.7
1	D	41	PHE	2.7
1	C	42	ASP	2.6
1	F	222	TRP	2.6
1	E	46	LEU	2.6
1	C	43	ARG	2.5
1	C	16	ILE	2.5
1	B	45	ARG	2.4
1	D	82	ILE	2.4
1	D	50	ILE	2.4
1	C	211	ALA	2.4
1	F	44	LEU	2.4
1	A	200	SER	2.4
1	B	46	LEU	2.3
1	D	217	LEU	2.3
1	C	198	ALA	2.3
1	F	47	ILE	2.3
1	C	157	ALA	2.3
1	C	201	ALA	2.3
1	D	194	ILE	2.3
1	D	215	ILE	2.3
1	E	41	PHE	2.3
1	F	42	ASP	2.3
1	F	21	ILE	2.2
1	D	49	ARG	2.2
1	F	158	TYR	2.2
1	A	221	GLY	2.1
1	F	50	ILE	2.1
1	B	43	ARG	2.1
1	B	215	ILE	2.1
1	E	49	ARG	2.1
1	C	196	THR	2.1
1	E	15	ILE	2.0
1	F	57	LYS	2.0
1	C	19	SER	2.0
1	B	41	PHE	2.0
1	D	53	ARG	2.0

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

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

## 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, 95<sup>th</sup> 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.

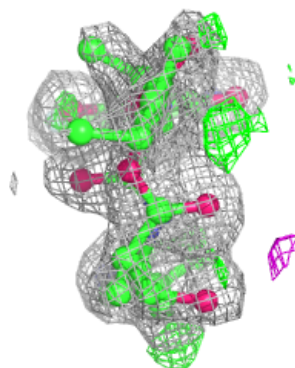
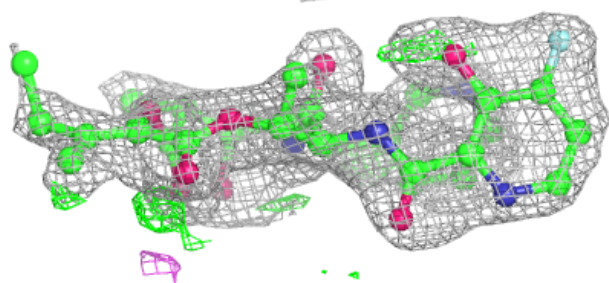
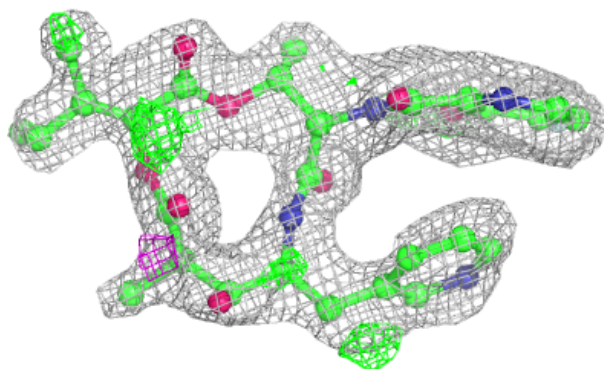
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
2	A1JGX	C	301	40/40	0.83	0.14	34,37,38,39	40
2	A1JGX	E	301	40/40	0.84	0.12	29,34,36,37	40
2	A1JGX	D	301	40/40	0.86	0.12	31,33,35,35	40
2	A1JGX	F	301	40/40	0.88	0.11	37,37,38,39	40
2	A1JGX	A	301	40/40	0.90	0.10	25,30,31,31	0
2	A1JGX	B	301	40/40	0.92	0.08	22,25,29,30	40

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.

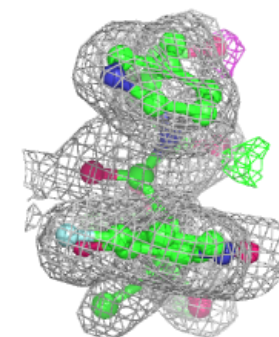
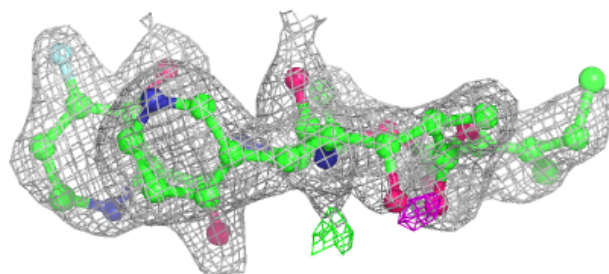
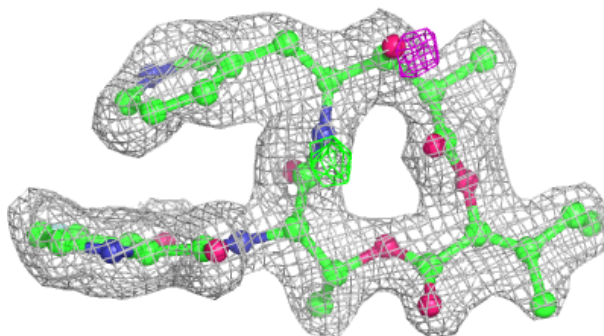


**Electron density around A1JGX C 301:**

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

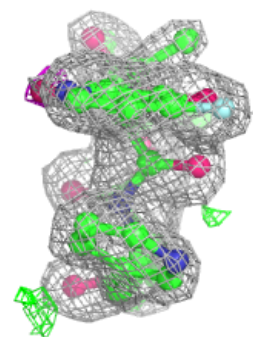
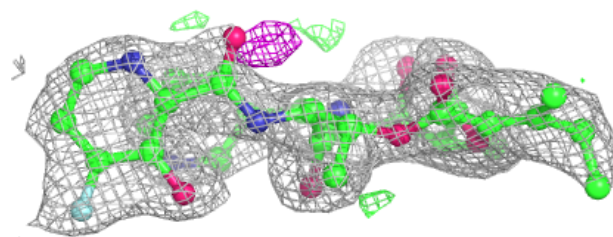
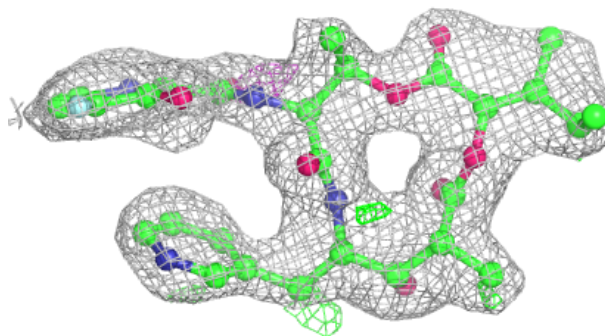
**Electron density around A1JGX E 301:**

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

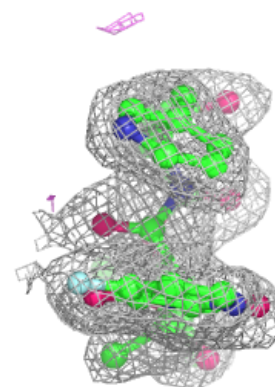
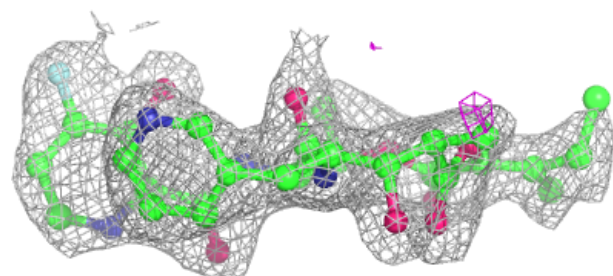
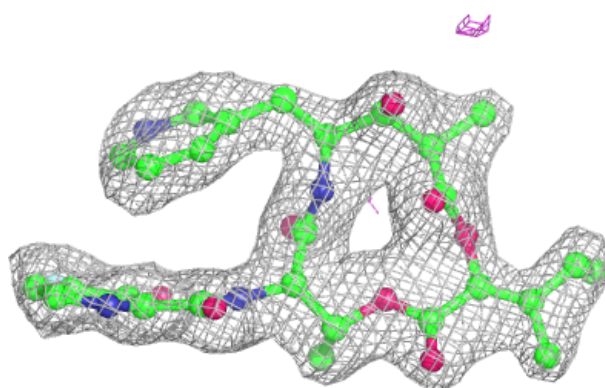


**Electron density around A1JGX D 301:**

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

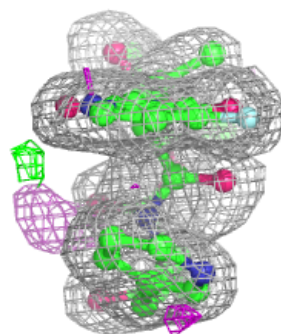
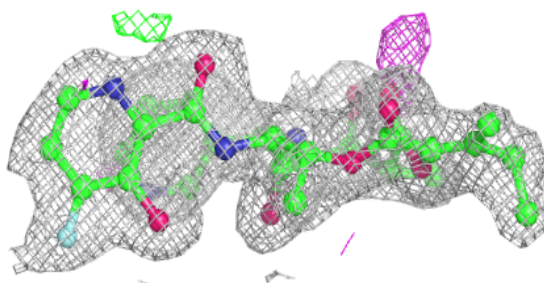
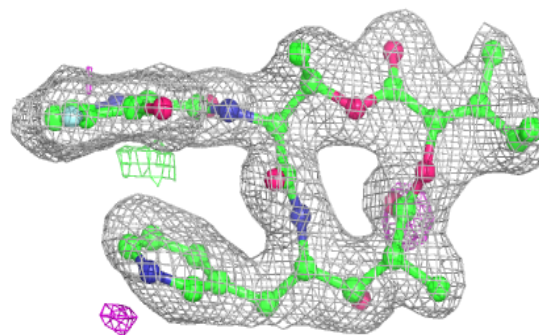
**Electron density around A1JGX F 301:**

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 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)

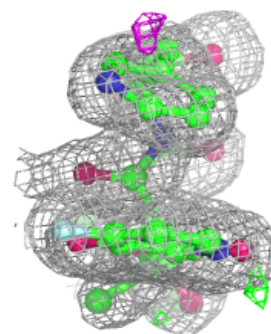
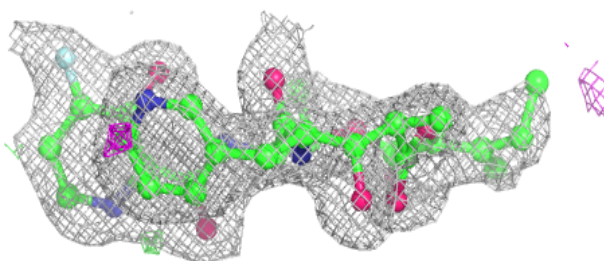
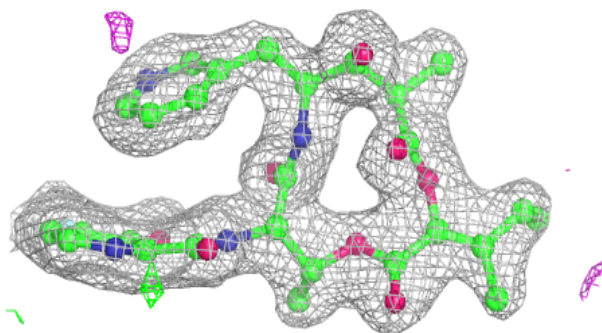


**Electron density around A1JGX A 301:**

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

**Electron density around A1JGX B 301:**

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



## 6.5 Other polymers [i](#)

There are no such residues in this entry.