wwPDB X-ray Structure Validation Summary Report (i)

May 15, 2020 – 11:12 pm BST

PDB ID	:	6PVE
Title	:	Structure of Nicotinamide N-Methyltransferase (NNMT) in complex with inhibitor LL319
Authors	:	Noinaj, N.; Huang, R.; Chen, D.; Yadav, R.
Deposited on	:	2019-07-20
Resolution	:	2.30 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

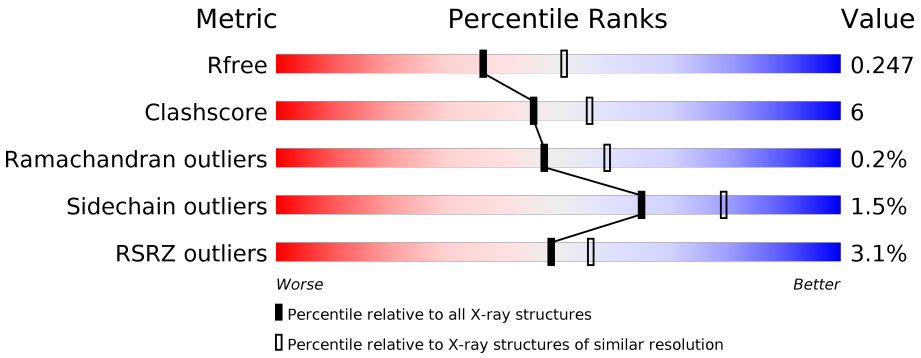
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.30 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	283	83% 11% • 5%
1	B	283	84% 11% 5%
1	C	283	6% 78% 11% • 10%
1	D	283	4% 74% 13% • • 10%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 8792 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 NNMT protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	270	Total	C	N	O	S	0	0	0
			2083	1335	337	399	12			
1	B	270	Total	C	N	O	S	0	1	0
			2081	1334	336	399	12			
1	C	256	Total	C	N	O	S	0	0	0
			1983	1277	318	377	11			
1	D	256	Total	C	N	O	S	0	1	0
			1995	1284	321	379	11			

There are 88 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-18	MET	-	expression tag	UNP Q6FH49
A	-17	GLY	-	expression tag	UNP Q6FH49
A	-16	SER	-	expression tag	UNP Q6FH49
A	-15	SER	-	expression tag	UNP Q6FH49
A	-14	HIS	-	expression tag	UNP Q6FH49
A	-13	HIS	-	expression tag	UNP Q6FH49
A	-12	HIS	-	expression tag	UNP Q6FH49
A	-11	HIS	-	expression tag	UNP Q6FH49
A	-10	HIS	-	expression tag	UNP Q6FH49
A	-9	HIS	-	expression tag	UNP Q6FH49
A	-8	SER	-	expression tag	UNP Q6FH49
A	-7	SER	-	expression tag	UNP Q6FH49
A	-6	GLY	-	expression tag	UNP Q6FH49
A	-5	LEU	-	expression tag	UNP Q6FH49
A	-4	VAL	-	expression tag	UNP Q6FH49
A	-3	PRO	-	expression tag	UNP Q6FH49
A	-2	ARG	-	expression tag	UNP Q6FH49
A	-1	GLY	-	expression tag	UNP Q6FH49
A	0	SER	-	expression tag	UNP Q6FH49
A	100	ALA	LYS	engineered mutation	UNP Q6FH49
A	101	ALA	GLU	engineered mutation	UNP Q6FH49

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Chain	Residue	Modelled	Actual	Comment	Reference
A	103	ALA	GLU	engineered mutation	UNP Q6FH49
B	-18	MET	-	expression tag	UNP Q6FH49
B	-17	GLY	-	expression tag	UNP Q6FH49
B	-16	SER	-	expression tag	UNP Q6FH49
B	-15	SER	-	expression tag	UNP Q6FH49
B	-14	HIS	-	expression tag	UNP Q6FH49
B	-13	HIS	-	expression tag	UNP Q6FH49
B	-12	HIS	-	expression tag	UNP Q6FH49
B	-11	HIS	-	expression tag	UNP Q6FH49
B	-10	HIS	-	expression tag	UNP Q6FH49
B	-9	HIS	-	expression tag	UNP Q6FH49
B	-8	SER	-	expression tag	UNP Q6FH49
B	-7	SER	-	expression tag	UNP Q6FH49
B	-6	GLY	-	expression tag	UNP Q6FH49
B	-5	LEU	-	expression tag	UNP Q6FH49
B	-4	VAL	-	expression tag	UNP Q6FH49
B	-3	PRO	-	expression tag	UNP Q6FH49
B	-2	ARG	-	expression tag	UNP Q6FH49
B	-1	GLY	-	expression tag	UNP Q6FH49
B	0	SER	-	expression tag	UNP Q6FH49
B	100	ALA	LYS	engineered mutation	UNP Q6FH49
B	101	ALA	GLU	engineered mutation	UNP Q6FH49
B	103	ALA	GLU	engineered mutation	UNP Q6FH49
C	-18	MET	-	expression tag	UNP Q6FH49
C	-17	GLY	-	expression tag	UNP Q6FH49
C	-16	SER	-	expression tag	UNP Q6FH49
C	-15	SER	-	expression tag	UNP Q6FH49
C	-14	HIS	-	expression tag	UNP Q6FH49
C	-13	HIS	-	expression tag	UNP Q6FH49
C	-12	HIS	-	expression tag	UNP Q6FH49
C	-11	HIS	-	expression tag	UNP Q6FH49
C	-10	HIS	-	expression tag	UNP Q6FH49
C	-9	HIS	-	expression tag	UNP Q6FH49
C	-8	SER	-	expression tag	UNP Q6FH49
C	-7	SER	-	expression tag	UNP Q6FH49
C	-6	GLY	-	expression tag	UNP Q6FH49
C	-5	LEU	-	expression tag	UNP Q6FH49
C	-4	VAL	-	expression tag	UNP Q6FH49
C	-3	PRO	-	expression tag	UNP Q6FH49
C	-2	ARG	-	expression tag	UNP Q6FH49
C	-1	GLY	-	expression tag	UNP Q6FH49
C	0	SER	-	expression tag	UNP Q6FH49

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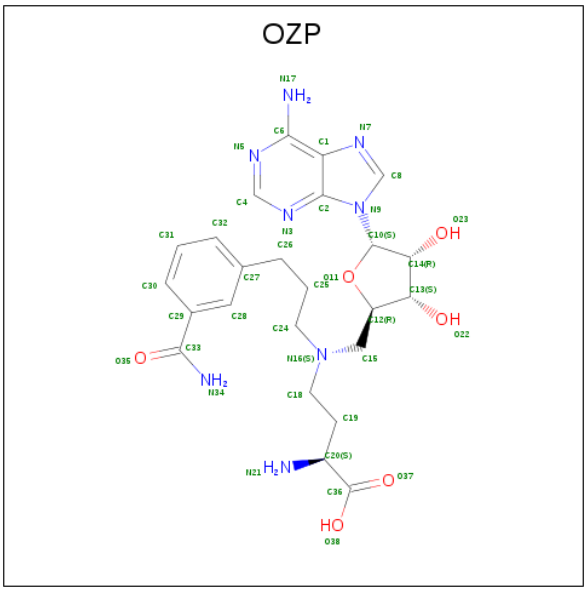
Chain	Residue	Modelled	Actual	Comment	Reference
C	100	ALA	LYS	engineered mutation	UNP Q6FH49
C	101	ALA	GLU	engineered mutation	UNP Q6FH49
C	103	ALA	GLU	engineered mutation	UNP Q6FH49
D	-18	MET	-	expression tag	UNP Q6FH49
D	-17	GLY	-	expression tag	UNP Q6FH49
D	-16	SER	-	expression tag	UNP Q6FH49
D	-15	SER	-	expression tag	UNP Q6FH49
D	-14	HIS	-	expression tag	UNP Q6FH49
D	-13	HIS	-	expression tag	UNP Q6FH49
D	-12	HIS	-	expression tag	UNP Q6FH49
D	-11	HIS	-	expression tag	UNP Q6FH49
D	-10	HIS	-	expression tag	UNP Q6FH49
D	-9	HIS	-	expression tag	UNP Q6FH49
D	-8	SER	-	expression tag	UNP Q6FH49
D	-7	SER	-	expression tag	UNP Q6FH49
D	-6	GLY	-	expression tag	UNP Q6FH49
D	-5	LEU	-	expression tag	UNP Q6FH49
D	-4	VAL	-	expression tag	UNP Q6FH49
D	-3	PRO	-	expression tag	UNP Q6FH49
D	-2	ARG	-	expression tag	UNP Q6FH49
D	-1	GLY	-	expression tag	UNP Q6FH49
D	0	SER	-	expression tag	UNP Q6FH49
D	100	ALA	LYS	engineered mutation	UNP Q6FH49
D	101	ALA	GLU	engineered mutation	UNP Q6FH49
D	103	ALA	GLU	engineered mutation	UNP Q6FH49

- Molecule 2 is 9-(5-{[(3S)-3-amino-3-carboxypropyl][3-(3-carbamoylphenyl)propyl]amino}-5-deoxy-alpha-D-ribofuranosyl)-9H-purin-6-amine (three-letter code: OZP) (formula: $C_{24}H_{32}N_8O_6$) (labeled as "Ligand of Interest" by author).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C N O 38 24 8 6	0	0
2	B	1	Total C N O 38 24 8 6	0	0
2	C	1	Total C N O 38 24 8 6	0	0
2	D	1	Total C N O 38 24 8 6	0	0

- Molecule 3 is water.

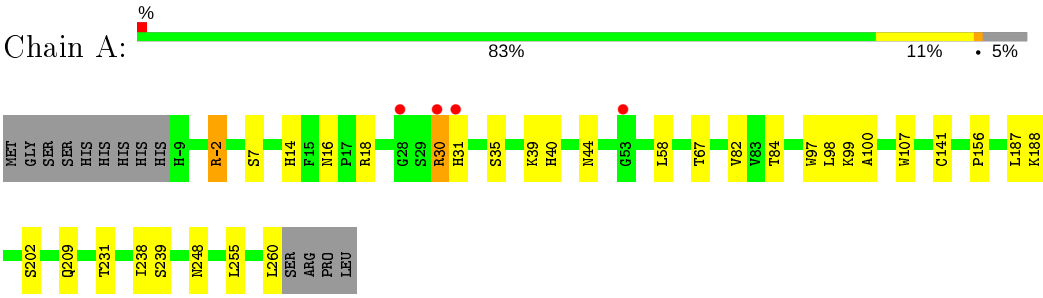
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	147	Total O 147 147	0	0
3	B	156	Total O 156 156	0	0
3	C	100	Total O 100 100	0	0
3	D	95	Total O 95 95	0	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA 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.

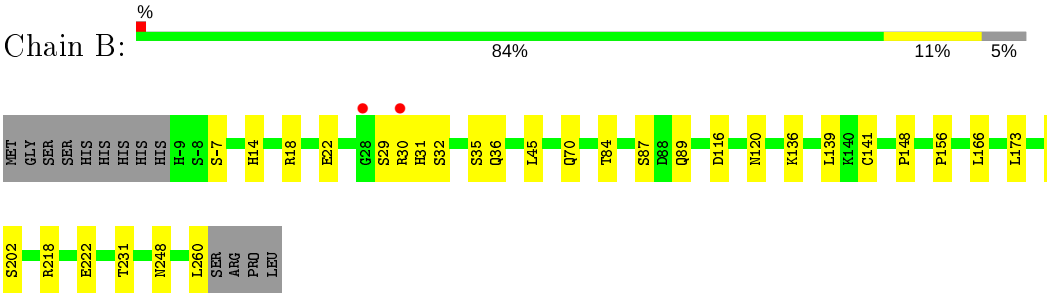
- Molecule 1: NNMT protein

Chain A:



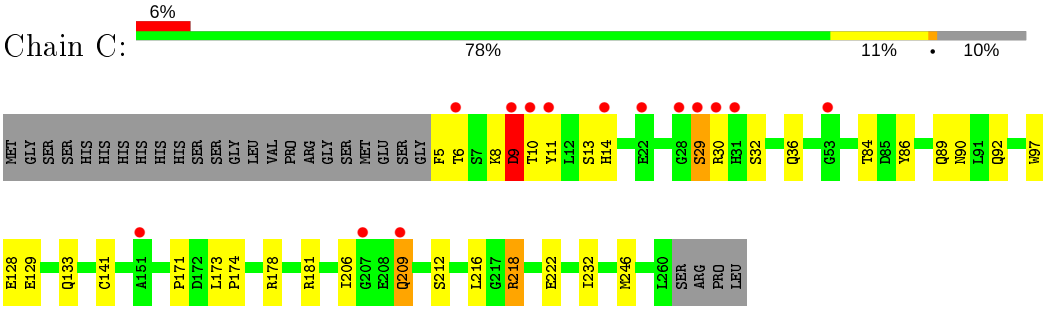
- Molecule 1: NNMT protein

Chain B:



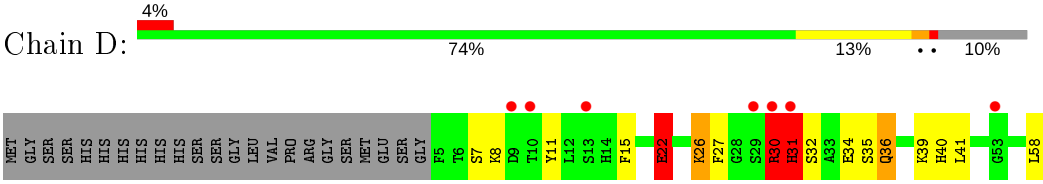
- Molecule 1: NNMT protein

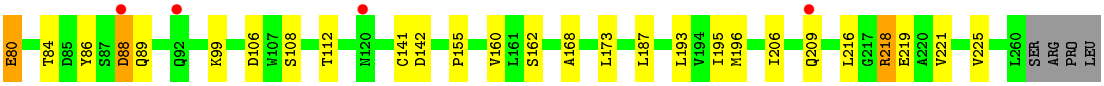
Chain C:



- Molecule 1: NNMT protein

Chain D:




E80
T84
D85
Y86
S87
D88
Q89
Q92
K99
D106
W107
S108
T112
N120
C141
D142
P155
V160
L161
S162
A168
L173
L187
L193
V194
I195
M196
I206
Q209
L216
G217
R218
E219
A220
V221
V225
L260
SER
ARG
PRO
LEU

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	45.90Å 62.36Å 107.86Å 91.78° 97.61° 111.56°	Depositor
Resolution (Å)	41.47 – 2.30 41.47 – 2.30	Depositor EDS
% Data completeness (in resolution range)	98.1 (41.47-2.30) 98.1 (41.47-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.22	Depositor
$< I/\sigma(I) >$ [1]	1.94 (at 2.29Å)	Xtriage
Refinement program	PHENIX 1.15.2_3472	Depositor
R, R_{free}	0.195 , 0.247 0.195 , 0.247	Depositor DCC
R_{free} test set	2007 reflections (4.17%)	wwPDB-VP
Wilson B-factor (Å^2)	20.3	Xtriage
Anisotropy	0.431	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 44.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	8792	wwPDB-VP
Average B, all atoms (Å^2)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.65% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: OZP

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	0.28	0/2129	0.54	1/2887 (0.0%)
1	B	0.28	0/2130	0.48	0/2890
1	C	0.33	0/2027	0.61	4/2751 (0.1%)
1	D	0.45	2/2042 (0.1%)	0.75	7/2770 (0.3%)
All	All	0.34	2/8328 (0.0%)	0.60	12/11298 (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	C	0	1
1	D	0	6
All	All	0	7

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	26	LYS	CD-CE	6.09	1.66	1.51
1	D	88	ASP	CG-OD2	5.05	1.36	1.25

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	30	ARG	CB-CA-C	-10.28	89.84	110.40
1	D	209	GLN	CA-CB-CG	-9.10	93.38	113.40
1	D	36	GLN	CA-CB-CG	-8.95	93.70	113.40
1	C	9	ASP	CB-CA-C	-8.36	93.68	110.40
1	D	88	ASP	CB-CG-OD1	-7.79	111.28	118.30

There are no chirality outliers.

5 of 7 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	9	ASP	Sidechain
1	D	30	ARG	Peptide
1	D	31	HIS	Peptide
1	D	79	LYS	Peptide
1	D	80	GLU	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	2083	0	2066	31	1
1	B	2081	0	2057	23	0
1	C	1983	0	1967	27	1
1	D	1995	0	1985	29	0
2	A	38	0	0	0	0
2	B	38	0	0	0	0
2	C	38	0	0	0	0
2	D	38	0	0	0	0
3	A	147	0	0	2	0
3	B	156	0	0	3	0
3	C	100	0	0	1	0
3	D	95	0	0	2	0
All	All	8792	0	8075	104	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 6.

The worst 5 of 104 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:C:9:ASP:OD1	1:C:10:THR:N	1.60	1.32
1:C:9:ASP:OD1	1:C:10:THR:OG1	1.59	1.21
1:A:99:LYS:O	1:C:181:ARG:NH2	1.85	1.07
1:D:30:ARG:O	1:D:31:HIS:CD2	2.14	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:32:SER:HB2	1:B:35:SER:H	1.42	0.84

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:239:SER:OG	1:C:232:ILE:O[1_445]	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	268/283 (95%)	263 (98%)	5 (2%)	0	100	100
1	B	269/283 (95%)	263 (98%)	6 (2%)	0	100	100
1	C	254/283 (90%)	247 (97%)	6 (2%)	1 (0%)	34	42
1	D	255/283 (90%)	246 (96%)	8 (3%)	1 (0%)	34	42
All	All	1046/1132 (92%)	1019 (97%)	25 (2%)	2 (0%)	47	58

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	30	ARG
1	C	29	SER

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	229/245 (94%)	228 (100%)	1 (0%)	91 96
1	B	228/245 (93%)	225 (99%)	3 (1%)	69 82
1	C	217/245 (89%)	214 (99%)	3 (1%)	67 81
1	D	219/245 (89%)	213 (97%)	6 (3%)	44 61
All	All	893/980 (91%)	880 (98%)	13 (2%)	65 79

5 of 13 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	120	ASN
1	C	218	ARG
1	D	30	ARG
1	C	29	SER
1	D	27	PHE

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

Mol	Chain	Res	Type
1	A	40	HIS
1	A	44	ASN
1	D	31	HIS
1	D	36	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)

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

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

4 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	OZP	C	301	-	34,41,41	4.04	9 (26%)	37,58,58	1.31	3 (8%)
2	OZP	D	301	-	34,41,41	4.03	10 (29%)	37,58,58	1.33	4 (10%)
2	OZP	A	301	-	34,41,41	3.99	10 (29%)	37,58,58	1.37	3 (8%)
2	OZP	B	301	-	34,41,41	4.00	10 (29%)	37,58,58	1.36	4 (10%)

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	OZP	C	301	-	-	5/19/43/43	0/4/4/4
2	OZP	D	301	-	-	5/19/43/43	0/4/4/4
2	OZP	A	301	-	-	3/19/43/43	0/4/4/4
2	OZP	B	301	-	-	2/19/43/43	0/4/4/4

The worst 5 of 39 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	301	OZP	C14-C10	-14.39	1.31	1.53
2	C	301	OZP	C14-C10	-14.31	1.32	1.53
2	B	301	OZP	C14-C10	-14.11	1.32	1.53
2	A	301	OZP	C14-C10	-14.10	1.32	1.53
2	C	301	OZP	O11-C10	11.11	1.56	1.41

The worst 5 of 14 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	301	OZP	N3-C4-N5	-4.26	122.02	128.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	301	OZP	N3-C4-N5	-4.25	122.03	128.68
2	D	301	OZP	N3-C4-N5	-4.23	122.07	128.68
2	C	301	OZP	N3-C4-N5	-4.19	122.12	128.68
2	A	301	OZP	C2-C1-N7	-2.96	106.32	109.40

There are no chirality outliers.

5 of 15 torsion outliers are listed below:

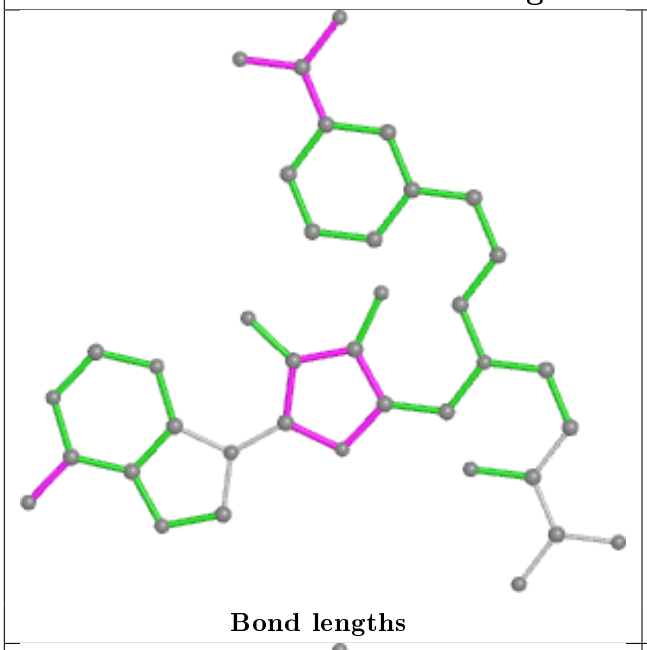
Mol	Chain	Res	Type	Atoms
2	A	301	OZP	C19-C18-N16-C24
2	D	301	OZP	C19-C18-N16-C24
2	C	301	OZP	C19-C18-N16-C24
2	A	301	OZP	C19-C18-N16-C15
2	D	301	OZP	C19-C18-N16-C15

There are no ring outliers.

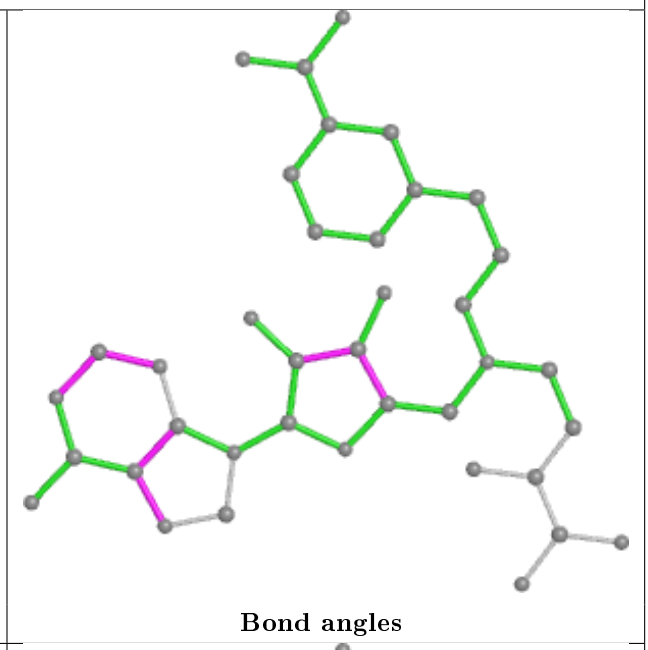
No monomer is involved in short contacts.

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.

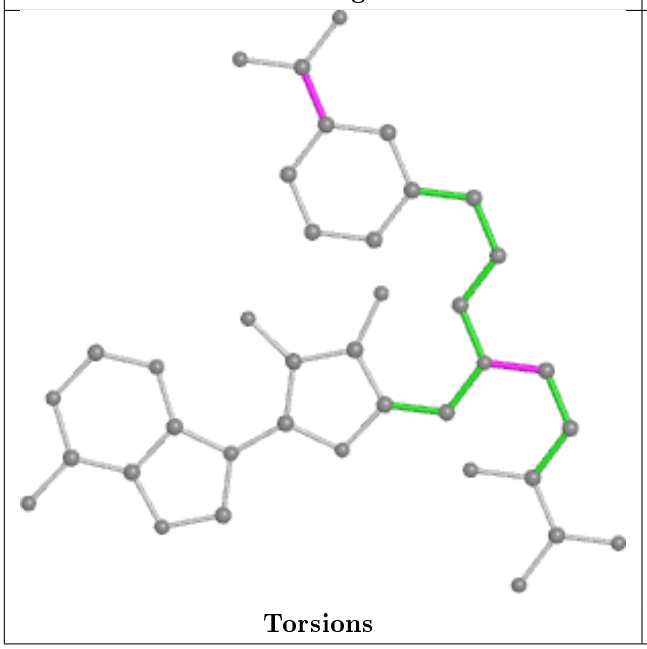
Ligand OZP C 301



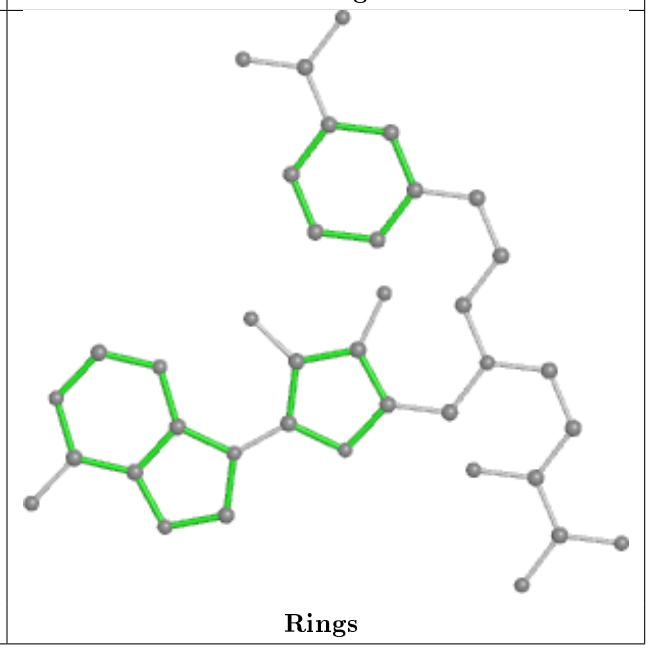
Bond lengths



Bond angles

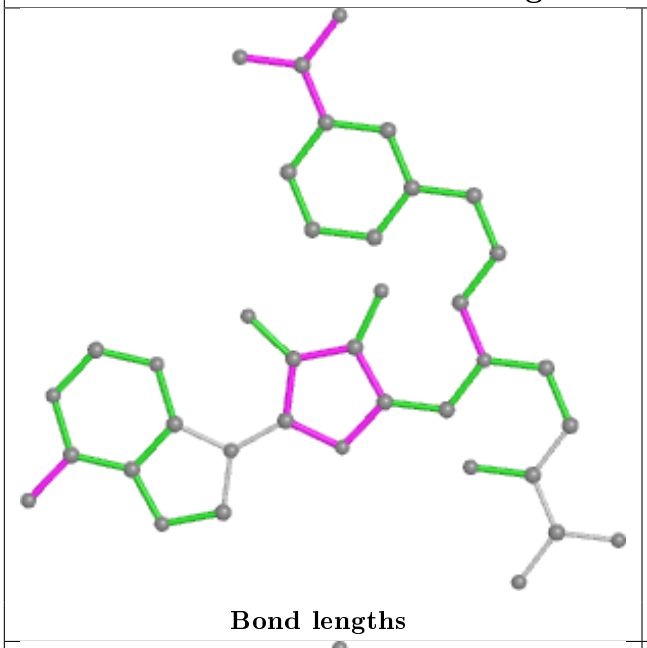


Torsions

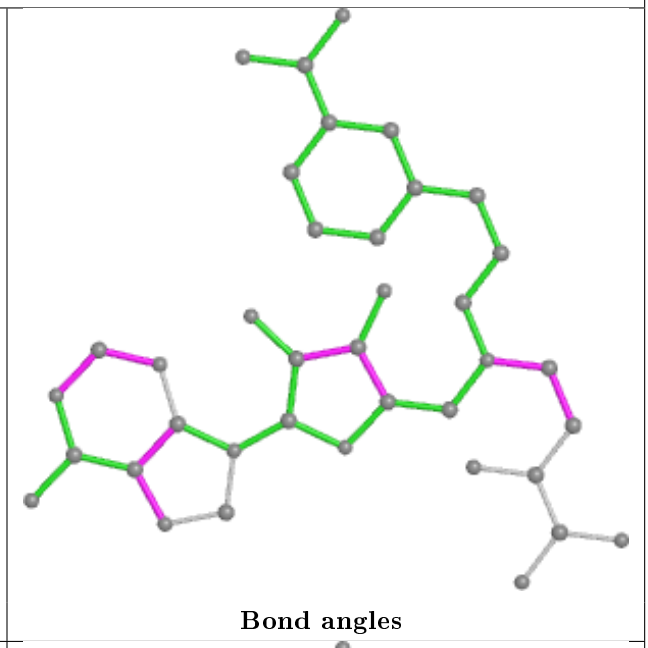


Rings

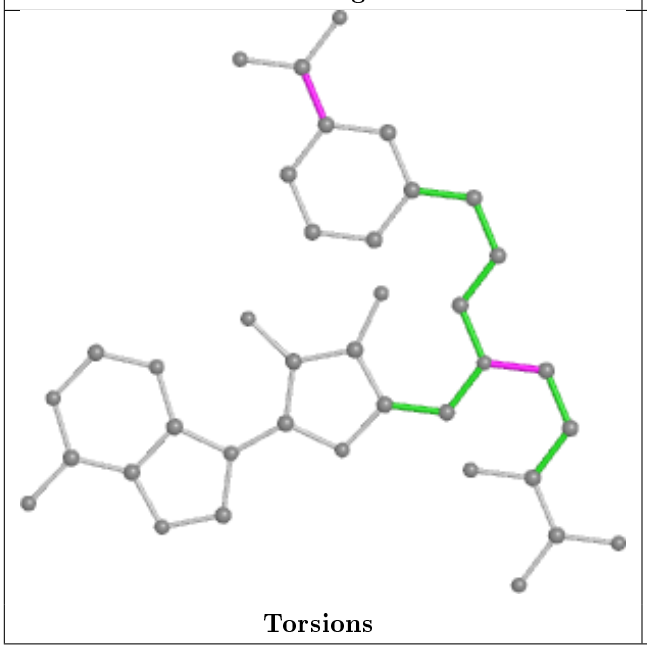
Ligand OZP D 301



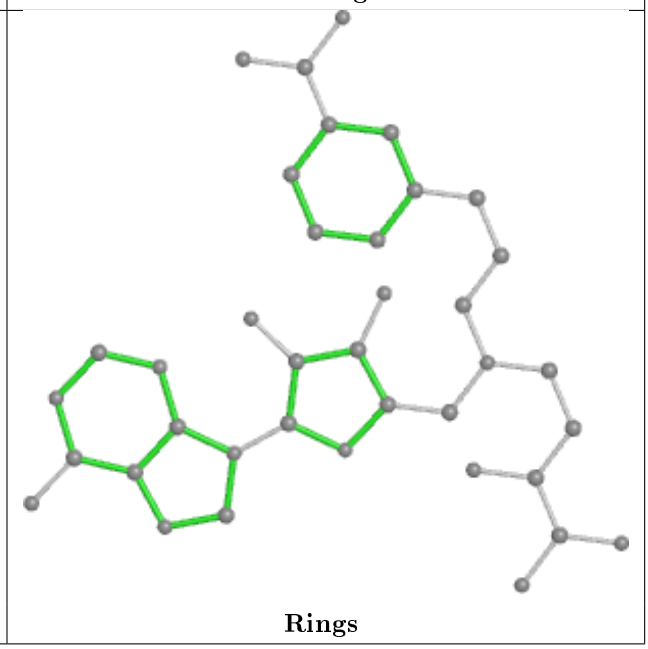
Bond lengths



Bond angles

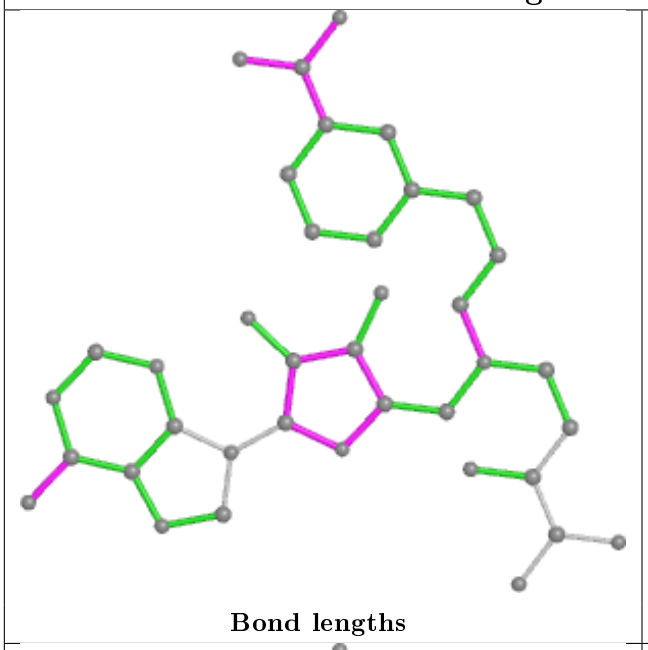


Torsions

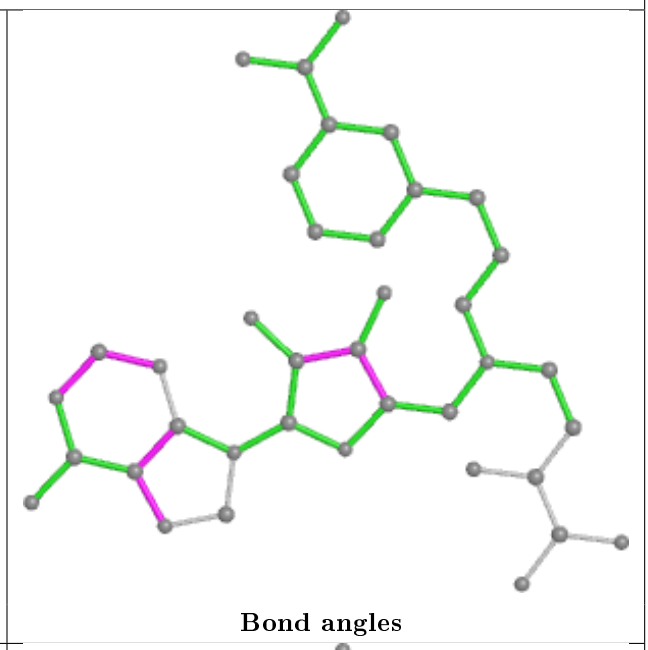


Rings

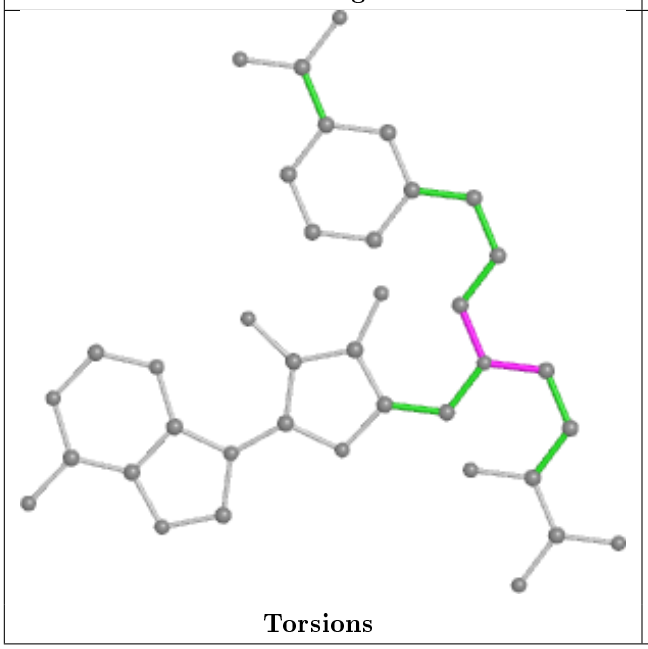
Ligand OZP A 301



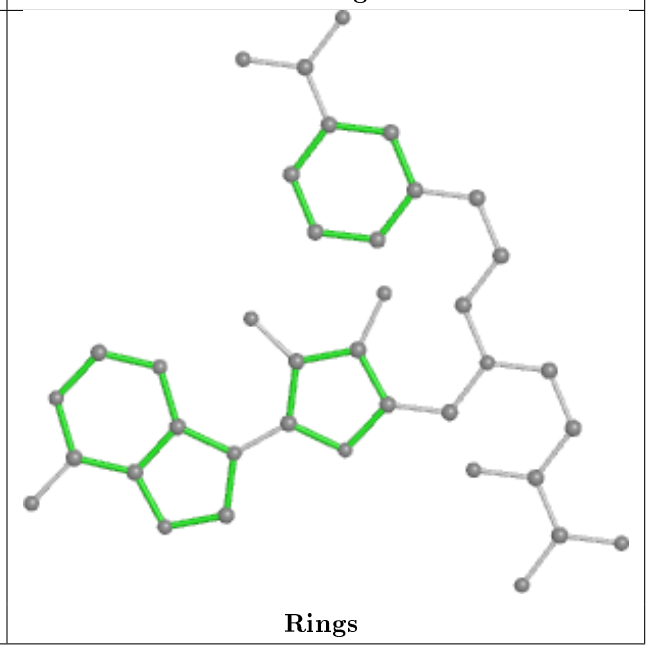
Bond lengths



Bond angles

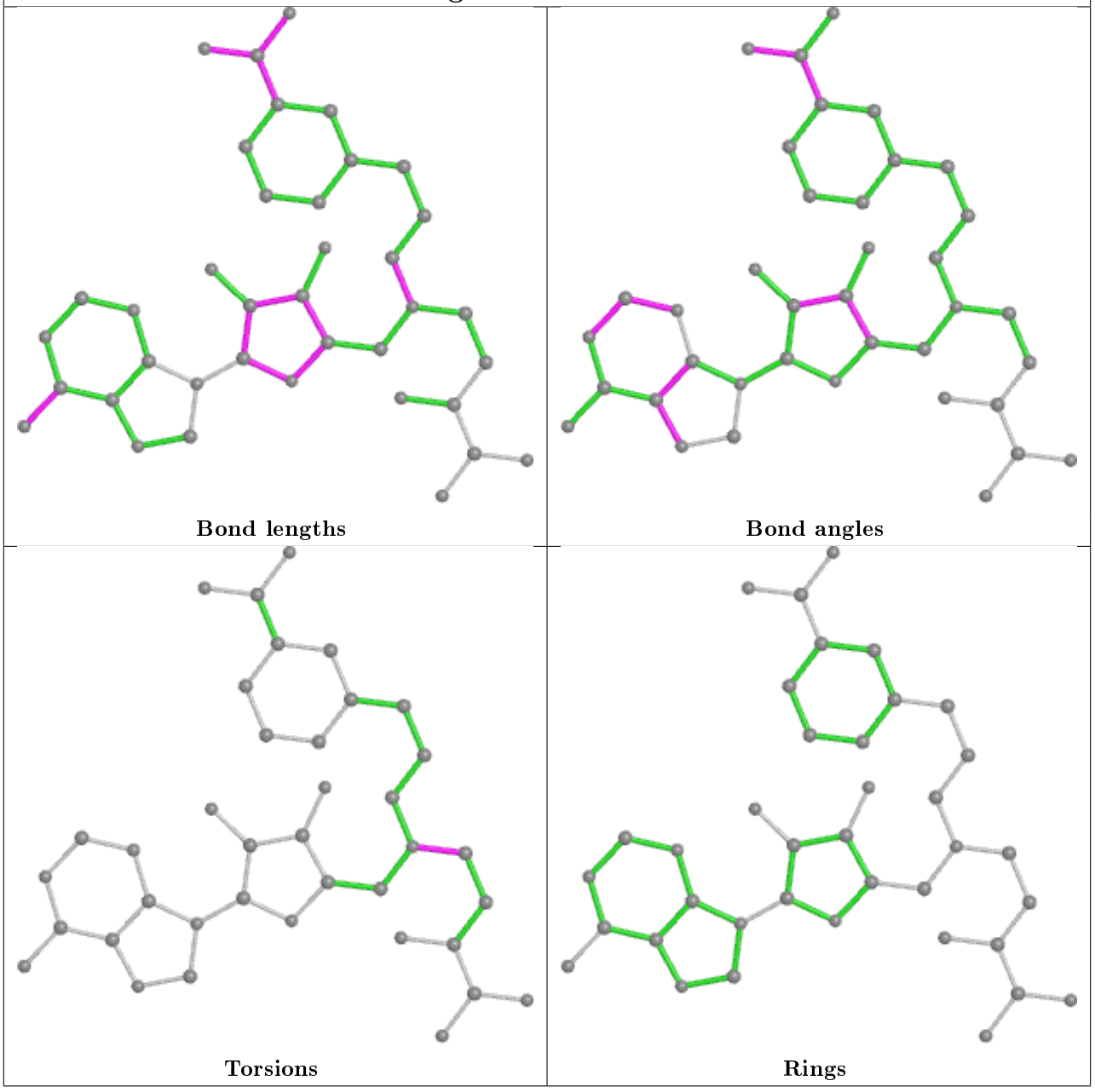


Torsions



Rings

Ligand OZP B 301



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

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^{th} 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	270/283 (95%)	-0.25	4 (1%)	73	79	10, 19, 32, 66	0
1	B	270/283 (95%)	-0.23	2 (0%)	87	91	10, 20, 33, 62	0
1	C	256/283 (90%)	0.19	16 (6%)	20	25	12, 25, 48, 75	0
1	D	256/283 (90%)	0.18	11 (4%)	35	42	11, 27, 48, 78	0
All	All	1052/1132 (92%)	-0.03	33 (3%)	49	56	10, 22, 44, 78	0

The worst 5 of 33 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	30	ARG	5.0
1	A	30	ARG	4.8
1	A	53	GLY	4.5
1	A	31	HIS	4.3
1	D	30	ARG	4.0

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 carbohydrates in this entry.

6.4 Ligands

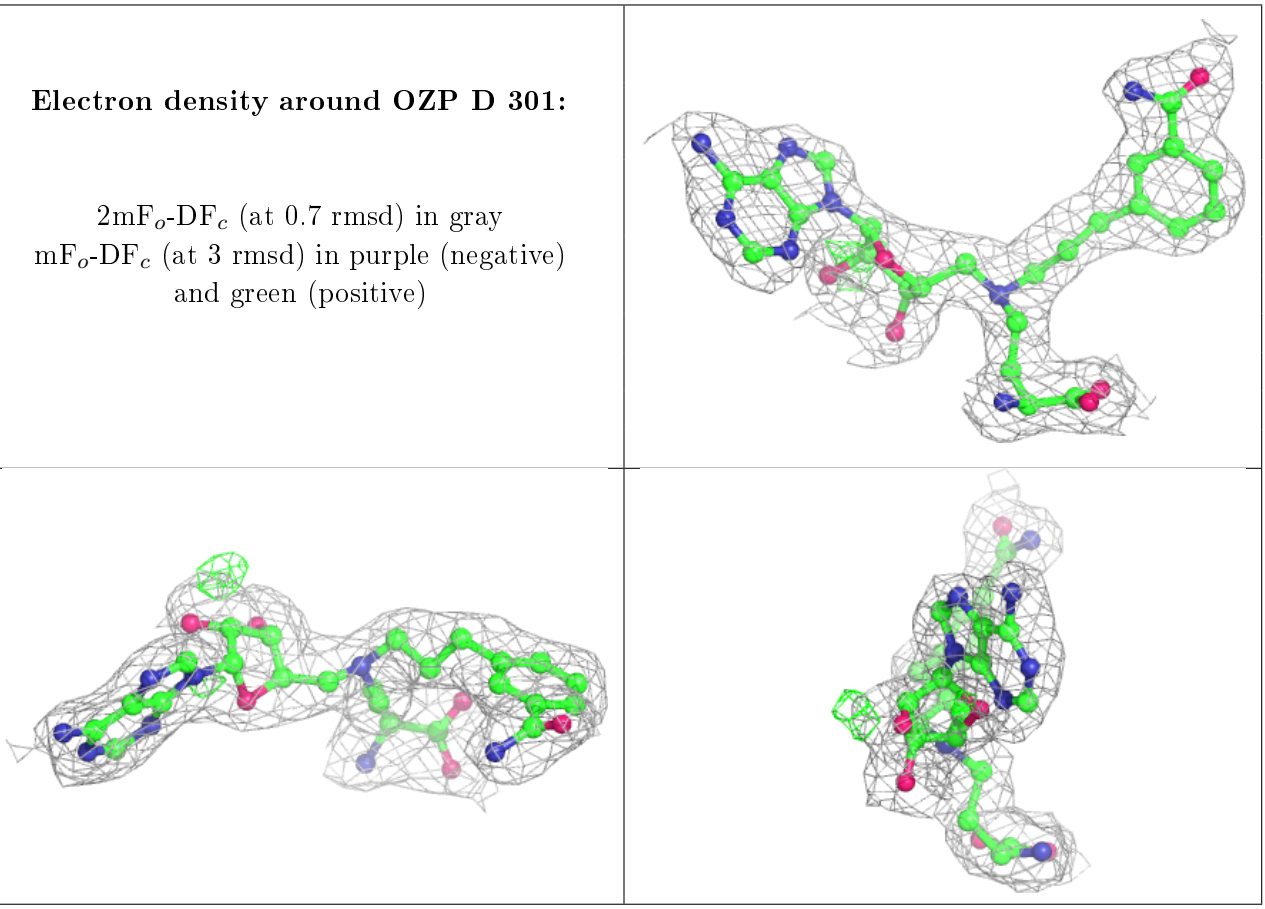
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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
2	OZP	D	301	38/38	0.93	0.13	14,18,24,27	0
2	OZP	C	301	38/38	0.95	0.13	12,18,23,27	0
2	OZP	A	301	38/38	0.95	0.13	8,12,16,22	0
2	OZP	B	301	38/38	0.95	0.14	7,13,17,22	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.

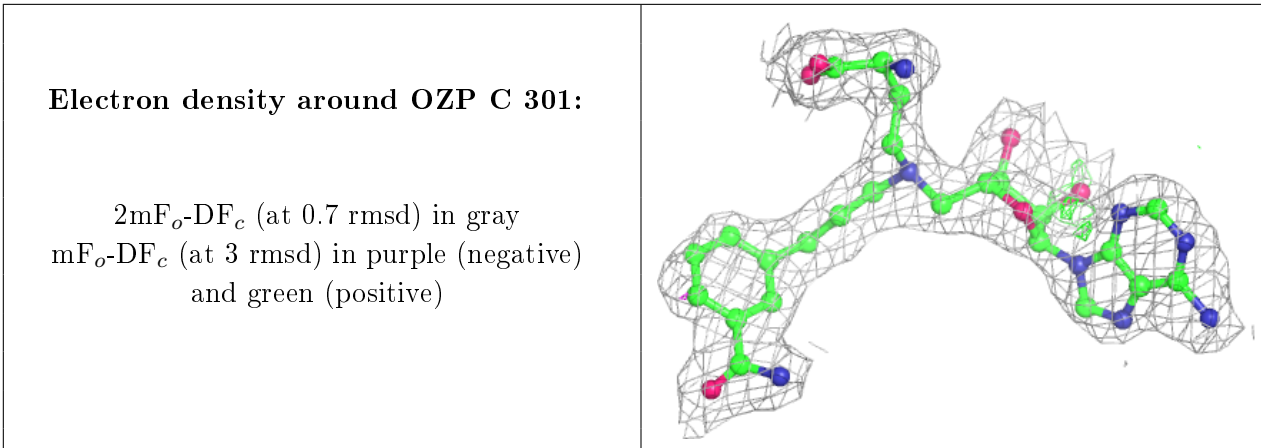
Electron density around OZP D 301:

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



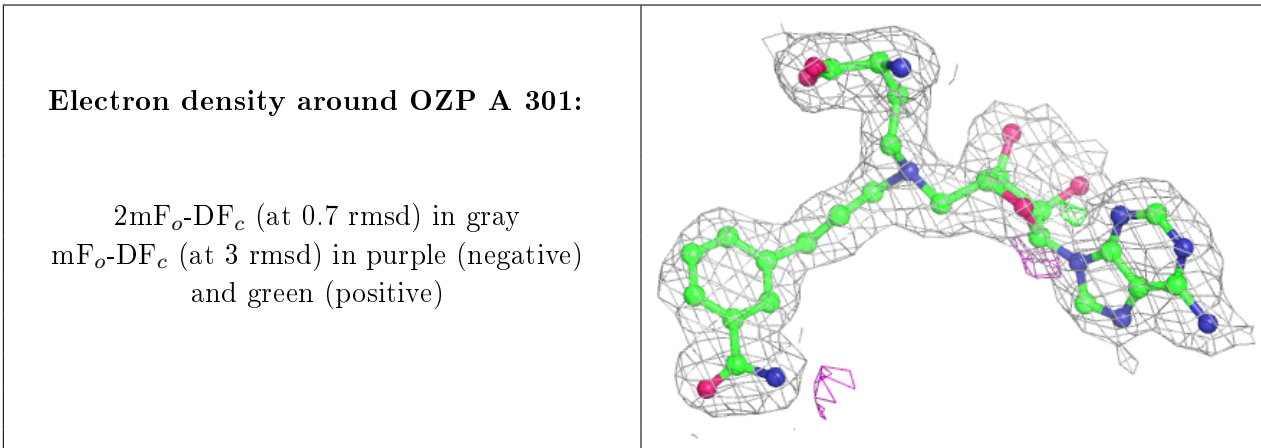
Electron density around OZP C 301:

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



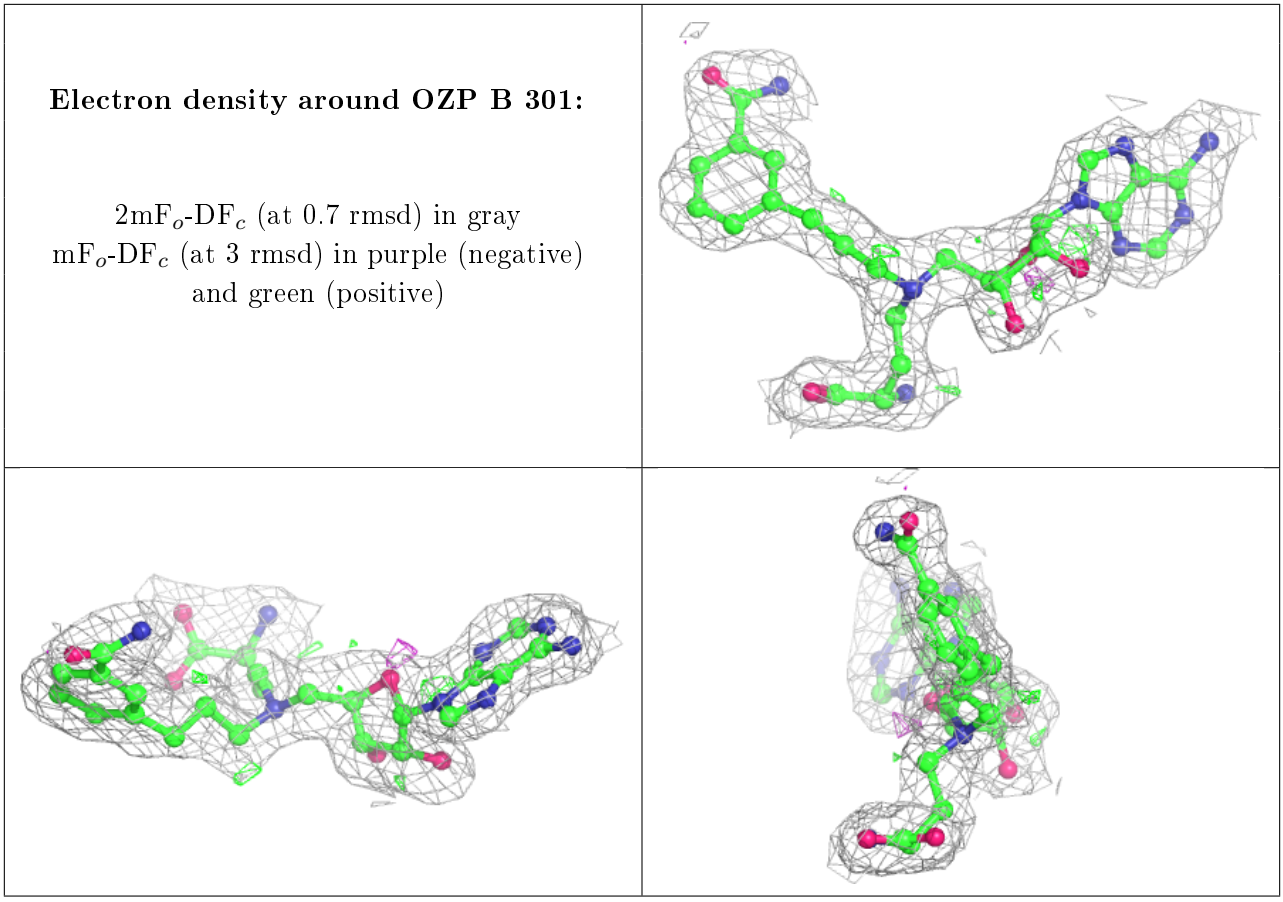
Electron density around OZP A 301:

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



Electron density around OZP 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

There are no such residues in this entry.