Full wwPDB X-ray Structure Validation Report (i)

May 26, 2020 – 02:34 am BST

PDB ID	:	2XA4
Title	:	Inhibitors of Jak2 Kinase domain
Authors	:	Read, J.; Green, I.; Pollard, H.; Howard, T.; Mott, R.
Deposited on	:	2010-03-26
Resolution	:	2.04 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

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

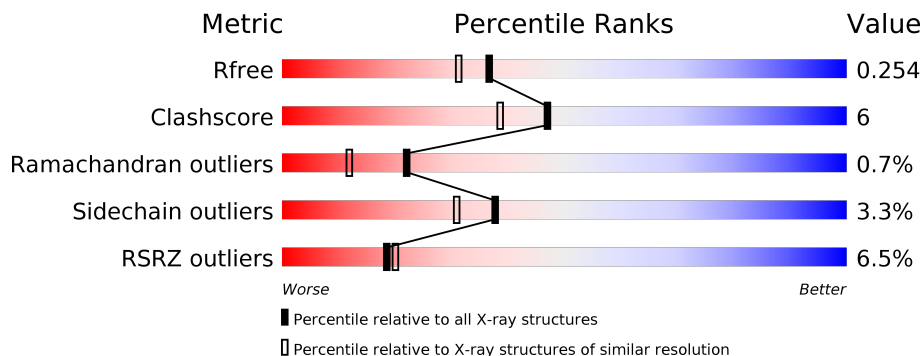|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & 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 2.04 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		0.254
Clashscore		6
Ramachandran outliers		0.7%
Sidechain outliers		3.3%
RSRZ outliers		6.5%

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}	130704	1692 (2.04-2.04)
Clashscore	141614	1773 (2.04-2.04)
Ramachandran outliers	138981	1752 (2.04-2.04)
Sidechain outliers	138945	1752 (2.04-2.04)
RSRZ outliers	127900	1672 (2.04-2.04)

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	298	8% / 82% / 10% · 7%
1	B	298	4% / 77% / 15% · 7%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 4871 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 TYROSINE-PROTEIN KINASE JAK2.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	278	Total	C	N	O	P	S	0	1	0
			2262	1436	388	421	2	15			
1	B	277	Total	C	N	O	P	S	0	1	0
			2253	1434	385	418	2	14			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	943	ALA	LYS	engineered mutation	UNP O60674
A	945	ALA	LYS	engineered mutation	UNP O60674
B	943	ALA	LYS	engineered mutation	UNP O60674
B	945	ALA	LYS	engineered mutation	UNP O60674

- Molecule 2 is 5-CHLORO-N2-[(1S)-1-(5-FLUOROPYRIMIDIN-2-YL)ETHYL]-N4-(5-METHYL-1H-PYRAZOL-3-YL)PYRIMIDINE-2,4-DIAMINE (three-letter code: AZ5) (formula: $C_{14}H_{14}ClFN_8$).
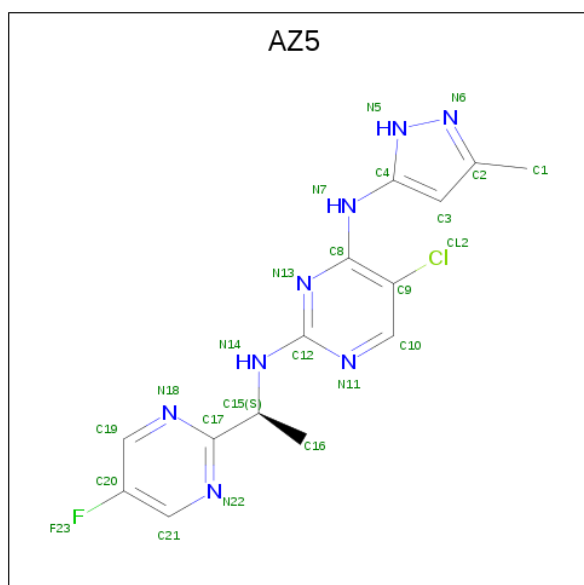
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 24	C 14	Cl 1	F 1	N 8	0	0
2	B	1	Total 24	C 14	Cl 1	F 1	N 8	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	128	Total 128	O 128	0	0
3	B	180	Total 180	O 180	0	0

3 Residue-property plots ⓘ

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: TYROSINE-PROTEIN KINASE JAK2
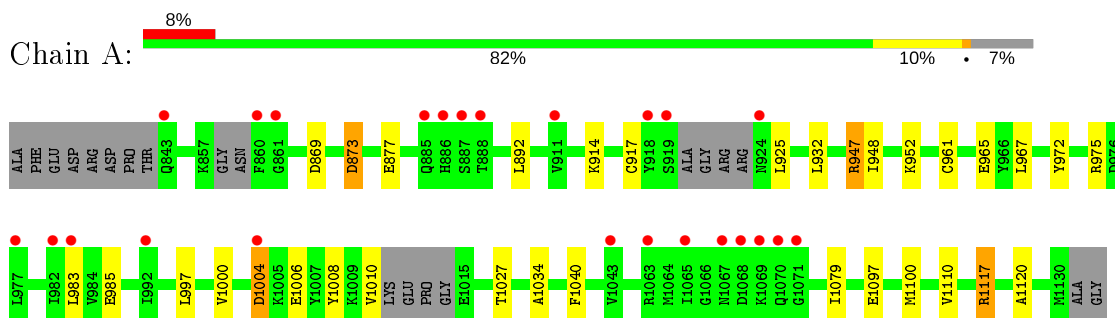
- Molecule 1: TYROSINE-PROTEIN KINASE JAK2
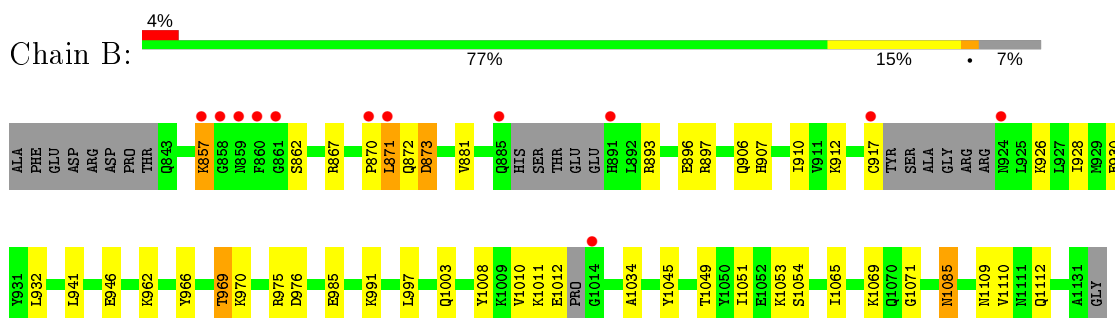
4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	43.85Å 126.74Å 134.34Å 90.00° 97.04° 90.00°	Depositor
Resolution (Å)	33.33 – 2.04 33.33 – 2.04	Depositor EDS
% Data completeness (in resolution range)	93.3 (33.33-2.04) 93.3 (33.33-2.04)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	1.85 (at 2.05Å)	Xtriage
Refinement program	REFMAC 5.5.0102	Depositor
R, R_{free}	0.197 , 0.245 0.206 , 0.254	Depositor DCC
R_{free} test set	2192 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å²)	27.3	Xtriage
Anisotropy	0.113	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.35 , 48.6	EDS
L-test for twinning[2]	$<|L|> = 0.48, <L^2> = 0.31$	Xtriage
Estimated twinning fraction	0.039 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	4871	wwPDB-VP
Average B, all atoms (Å²)	33.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.77% 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: AZ5, PTR

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	0.48	0/2276	0.62	0/3066
1	B	0.54	0/2268	0.65	0/3054
All	All	0.51	0/4544	0.64	0/6120

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 (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	2262	0	2198	19	0
1	B	2253	0	2194	37	0
2	A	24	0	14	1	0
2	B	24	0	14	1	0
3	A	128	0	0	0	0
3	B	180	0	0	3	0
All	All	4871	0	4420	56	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 6.

All (56) 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:932:LEU:H	2:B:2132:AZ5:H5	1.11	0.95
1:A:932:LEU:H	2:A:2131:AZ5:H5	1.16	0.89
1:B:932:LEU:HD22	1:B:985:GLU:HG3	1.67	0.75
1:B:941:LEU:HD23	1:B:1051:ILE:CD1	2.22	0.69
1:B:1051:ILE:O	1:B:1051:ILE:HG22	1.92	0.68
1:A:1027:THR:HG22	1:A:1079:ILE:HD13	1.79	0.64
1:A:948:ILE:HG23	1:A:952:LYS:HG2	1.79	0.64
1:A:947:ARG:HG2	1:A:947:ARG:O	2.00	0.61
1:B:966:TYR:O	1:B:969:THR:HG22	2.02	0.59
1:B:912:LYS:HZ2	1:B:991:LYS:HZ3	1.50	0.58
1:A:1097:GLU:HA	1:A:1100:MET:CE	2.36	0.55
1:A:1097:GLU:HA	1:A:1100:MET:HE3	1.88	0.55
1:A:961[B]:CYS:SG	1:A:1120:ALA:HB2	2.47	0.55
1:B:871:LEU:O	1:B:873:ASP:N	2.36	0.55
1:B:912:LYS:NZ	1:B:991:LYS:HZ3	2.06	0.53
1:B:941:LEU:HD23	1:B:1051:ILE:HD12	1.91	0.53
1:B:930:GLU:OE1	1:B:991:LYS:NZ	2.40	0.53
1:B:1008:PTR:HE2	1:B:1010:VAL:HG12	1.92	0.52
1:B:1053:LYS:O	1:B:1054:SER:CB	2.58	0.51
1:B:1065:ILE:HG22	1:B:1069:LYS:HG3	1.92	0.50
1:B:946:GLU:H	1:B:946:GLU:CD	2.16	0.49
1:B:1034:ALA:CB	1:B:1110:VAL:HG13	2.43	0.49
1:B:1065:ILE:CG2	1:B:1069:LYS:HG3	2.44	0.48
1:A:1008:PTR:HE2	1:A:1010:VAL:HG22	1.95	0.47
1:B:881:VAL:HG22	1:B:928:ILE:HD12	1.97	0.47
1:B:1085:ASN:ND2	3:B:2135:HOH:O	2.29	0.47
1:A:972:TYR:CE2	1:A:1000:VAL:HG22	2.50	0.47
1:B:897:ARG:NH2	1:B:1008:PTR:O3P	2.48	0.46
1:B:1051:ILE:HD12	1:B:1051:ILE:N	2.31	0.46
1:A:1034:ALA:CB	1:A:1110:VAL:HG13	2.45	0.46
1:B:912:LYS:NZ	1:B:991:LYS:NZ	2.64	0.46
1:B:969:THR:HG22	1:B:970:LYS:HG2	1.97	0.46
1:B:867:ARG:NH1	3:B:2005:HOH:O	2.46	0.45
1:A:877:GLU:OE1	1:A:914:LYS:NZ	2.41	0.45
1:B:1034:ALA:HB3	1:B:1110:VAL:HG13	1.98	0.45
1:B:1008:PTR:CE2	1:B:1010:VAL:HG12	2.47	0.45
1:B:893:ARG:HD3	1:B:897:ARG:HD3	1.97	0.45
1:A:961[A]:CYS:SG	1:A:1040:PHE:CZ	3.09	0.45
1:B:907:HIS:HB3	1:B:910:ILE:HD12	1.98	0.45
1:B:975:ARG:HD3	1:B:997:LEU:O	2.17	0.44
1:A:965:GLU:OE2	1:A:1117:ARG:NH1	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:932:LEU:HD22	1:A:985:GLU:HG3	2.00	0.43
1:B:1012:GLU:CB	3:B:2028:HOH:O	2.66	0.43
1:A:1004:ASP:N	1:A:1004:ASP:OD1	2.48	0.43
1:B:871:LEU:HD23	1:B:871:LEU:H	1.84	0.43
1:A:975:ARG:HD3	1:A:997:LEU:O	2.20	0.42
1:A:869:ASP:OD2	1:A:873:ASP:O	2.37	0.41
1:B:1045:TYR:O	1:B:1049:THR:HG23	2.20	0.41
1:A:932:LEU:HD12	1:A:983:LEU:CB	2.50	0.41
1:B:857:LYS:HA	1:B:862:SER:HA	2.03	0.41
1:A:967:LEU:HD22	1:A:972:TYR:HB2	2.03	0.41
1:B:917:CYS:SG	1:B:926:LYS:HD2	2.61	0.41
1:B:1109:ASN:ND2	1:B:1112:GLN:OE1	2.54	0.40
1:B:976:ASP:HB2	1:B:997:LEU:HD12	2.03	0.40
1:B:1051:ILE:O	1:B:1051:ILE:CG2	2.64	0.40
1:B:893:ARG:NH2	1:B:896:GLU:OE2	2.54	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	269/298 (90%)	259 (96%)	9 (3%)	1 (0%)	34	24
1	B	268/298 (90%)	256 (96%)	9 (3%)	3 (1%)	14	5
All	All	537/596 (90%)	515 (96%)	18 (3%)	4 (1%)	22	12

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	872	GLN
1	B	1071	GLY
1	A	873	ASP

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Mol	Chain	Res	Type
1	B	870	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	242/267 (91%)	235 (97%)	7 (3%)	42	35
1	B	241/267 (90%)	232 (96%)	9 (4%)	34	27
All	All	483/534 (90%)	467 (97%)	16 (3%)	38	31

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

Mol	Chain	Res	Type
1	A	892	LEU
1	A	917	CYS
1	A	925	LEU
1	A	947	ARG
1	A	1004	ASP
1	A	1006	GLU
1	A	1117	ARG
1	B	857	LYS
1	B	871	LEU
1	B	873	ASP
1	B	906	GLN
1	B	962	LYS
1	B	969	THR
1	B	1003	GLN
1	B	1011	LYS
1	B	1085	ASN

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	843	GLN

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Mol	Chain	Res	Type
1	A	848	HIS
1	A	924	ASN
1	B	1072	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)

4 non-standard protein/DNA/RNA residues 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	#$|Z| > 2$
1	PTR	B	1008	1	15,16,17	2.17	1 (6%)	19,22,24	0.99	2 (10%)
1	PTR	B	1007	1	15,16,17	1.92	1 (6%)	19,22,24	0.93	1 (5%)
1	PTR	A	1007	1	15,16,17	1.93	1 (6%)	19,22,24	0.70	0
1	PTR	A	1008	1	15,16,17	1.93	1 (6%)	19,22,24	0.76	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
1	PTR	B	1008	1	-	2/10/11/13	0/1/1/1
1	PTR	B	1007	1	-	0/10/11/13	0/1/1/1
1	PTR	A	1007	1	-	0/10/11/13	0/1/1/1
1	PTR	A	1008	1	-	0/10/11/13	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	1008	PTR	OH-CZ	-7.82	1.22	1.40
1	A	1008	PTR	OH-CZ	-7.26	1.24	1.40
1	A	1007	PTR	OH-CZ	-7.05	1.24	1.40
1	B	1007	PTR	OH-CZ	-7.03	1.24	1.40

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	1008	PTR	OH-CZ-CE1	2.34	126.20	119.23
1	B	1008	PTR	OH-CZ-CE2	-2.19	112.72	119.23
1	B	1007	PTR	OH-CZ-CE2	2.06	125.36	119.23

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	B	1008	PTR	CE1-CZ-OH-P
1	B	1008	PTR	CE2-CZ-OH-P

There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	1008	PTR	3	0
1	A	1008	PTR	1	0

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

2 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	AZ5	B	2132	-	24,26,26	1.94	4 (16%)	24,36,36	2.59	9 (37%)
2	AZ5	A	2131	-	24,26,26	1.83	5 (20%)	24,36,36	2.47	7 (29%)

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	AZ5	B	2132	-	-	1/10/12/12	0/3/3/3
2	AZ5	A	2131	-	-	1/10/12/12	0/3/3/3

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	2132	AZ5	C10-C9	6.45	1.45	1.39
2	A	2131	AZ5	C10-C9	5.15	1.44	1.39
2	A	2131	AZ5	C8-N13	-4.39	1.26	1.34
2	B	2132	AZ5	C8-N13	-3.95	1.27	1.34
2	A	2131	AZ5	C12-N11	-3.56	1.29	1.34
2	B	2132	AZ5	C12-N11	-3.33	1.30	1.34
2	B	2132	AZ5	C12-N14	2.41	1.37	1.34
2	A	2131	AZ5	C12-N14	2.06	1.37	1.34
2	A	2131	AZ5	C2-N6	2.01	1.36	1.34

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2131	AZ5	C9-C10-N11	-8.35	115.67	122.84
2	B	2132	AZ5	C9-C10-N11	-7.33	116.54	122.84
2	B	2132	AZ5	C16-C15-C17	-5.48	104.62	110.95
2	B	2132	AZ5	N11-C12-N13	-4.73	122.07	126.55
2	A	2131	AZ5	N11-C12-N13	-3.95	122.81	126.55
2	A	2131	AZ5	C16-C15-C17	-3.17	107.29	110.95
2	A	2131	AZ5	C10-N11-C12	3.04	120.46	115.88
2	A	2131	AZ5	C20-C21-N22	2.97	123.25	121.46
2	B	2132	AZ5	C10-N11-C12	2.93	120.30	115.88
2	B	2132	AZ5	N14-C12-N13	2.72	121.26	117.18
2	A	2131	AZ5	C3-C2-N6	-2.67	105.97	110.81
2	B	2132	AZ5	C3-C2-N6	-2.63	106.03	110.81
2	B	2132	AZ5	C10-C9-CL2	-2.38	115.35	118.60
2	B	2132	AZ5	C20-C19-N18	2.24	122.81	121.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2132	AZ5	C20-C21-N22	2.19	122.78	121.46
2	A	2131	AZ5	C20-C19-N18	2.14	122.75	121.46

There are no chirality outliers.
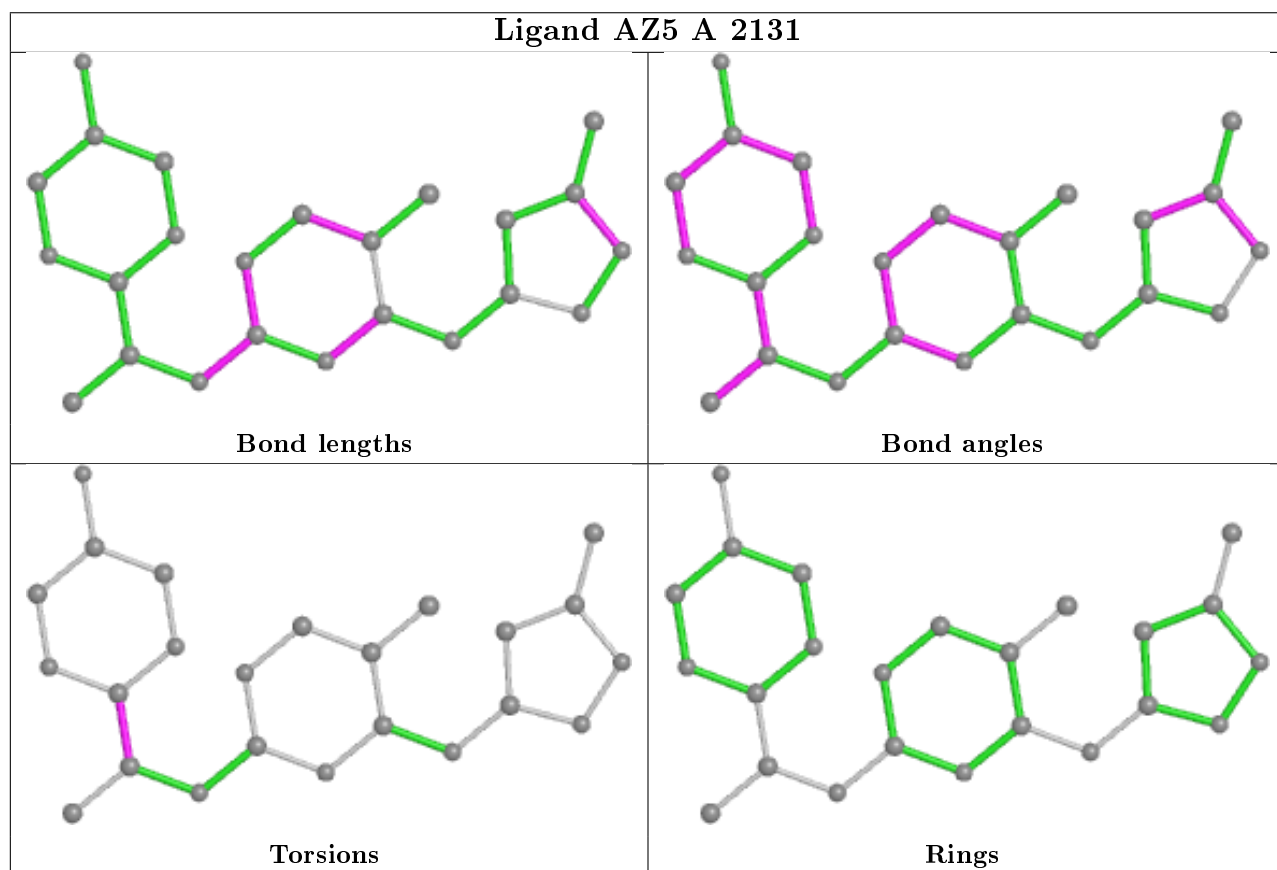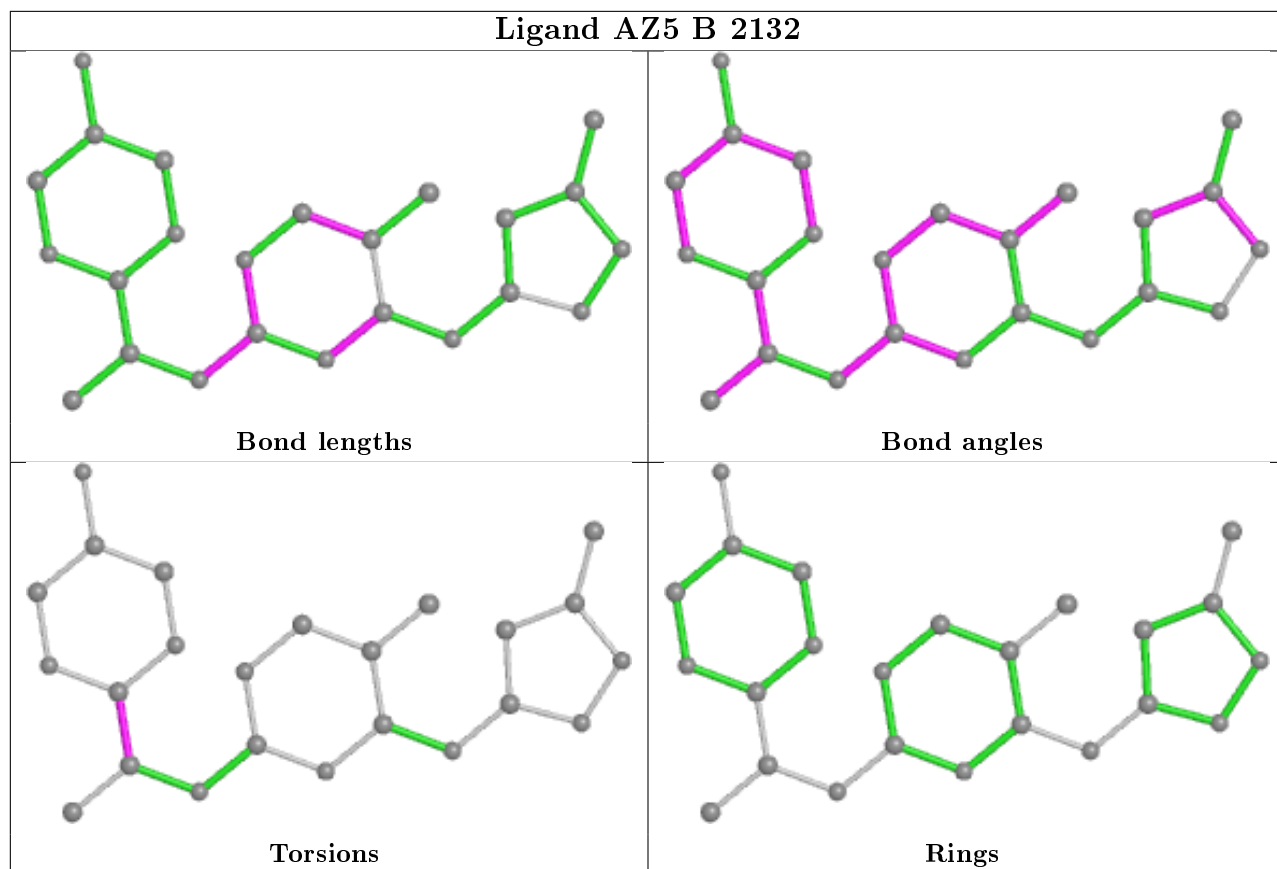
All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	2132	AZ5	N14-C15-C17-N18
2	A	2131	AZ5	N14-C15-C17-N18

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	2132	AZ5	1	0
2	A	2131	AZ5	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 AZ5 B 2132

Bond lengths

Bond angles

Torsions

Rings

Ligand AZ5 A 2131

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	276/298 (92%)	0.52	24 (8%)	10	10	25, 35, 52, 56	0
1	B	275/298 (92%)	0.11	12 (4%)	34	37	16, 28, 47, 58	0
All	All	551/596 (92%)	0.32	36 (6%)	18	20	16, 32, 50, 58	0

All (36) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	886	HIS	6.6
1	A	919	SER	5.5
1	A	1068	ASP	4.6
1	B	860	PHE	4.5
1	B	861	GLY	4.5
1	B	1014	GLY	4.0
1	B	885	GLN	3.9
1	B	870	PRO	3.9
1	A	1004	ASP	3.7
1	B	858	GLY	3.6
1	A	918	TYR	3.5
1	B	859	ASN	3.3
1	B	871	LEU	3.3
1	B	917	CYS	3.2
1	A	888	THR	3.1
1	A	1070	GLN	3.1
1	B	924	ASN	3.0
1	A	1063	ARG	2.9
1	A	1071	GLY	2.9
1	A	977	LEU	2.9
1	B	857	LYS	2.8
1	A	860	PHE	2.7
1	A	887	SER	2.6
1	A	1069	LYS	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	982	ILE	2.4
1	A	843	GLN	2.4
1	A	861	GLY	2.4
1	A	1065	ILE	2.4
1	A	983	LEU	2.3
1	A	911	VAL	2.3
1	A	1067	ASN	2.3
1	A	992	ILE	2.3
1	A	885	GLN	2.3
1	A	1043	VAL	2.2
1	A	924	ASN	2.2
1	B	891	HIS	2.2

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

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

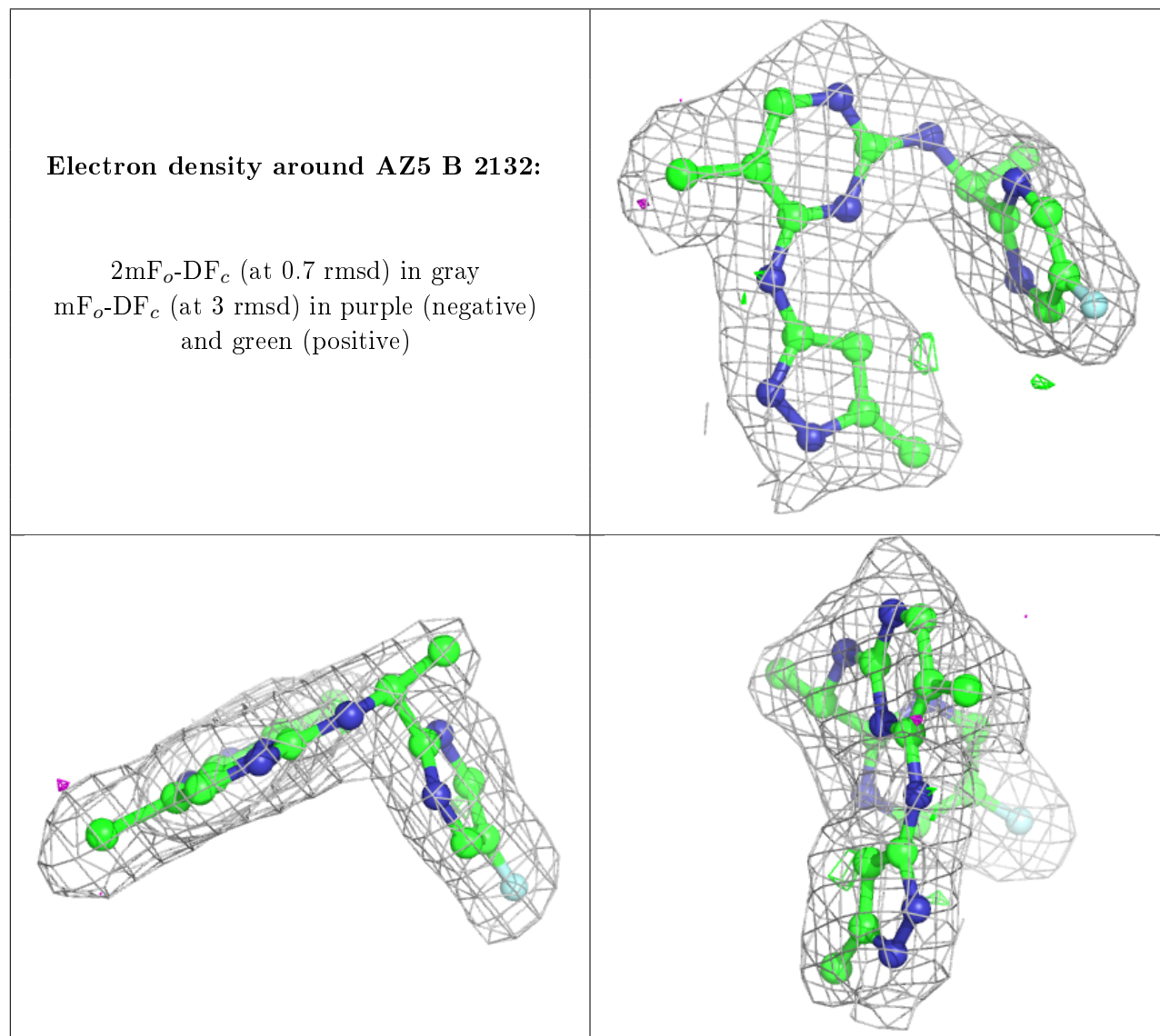| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	PTR	A	1007	16/17	0.85	0.17	45,47,50,50	0
1	PTR	A	1008	16/17	0.91	0.12	45,50,57,57	0
1	PTR	B	1007	16/17	0.93	0.11	27,33,46,46	0
1	PTR	B	1008	16/17	0.95	0.14	27,33,43,44	0

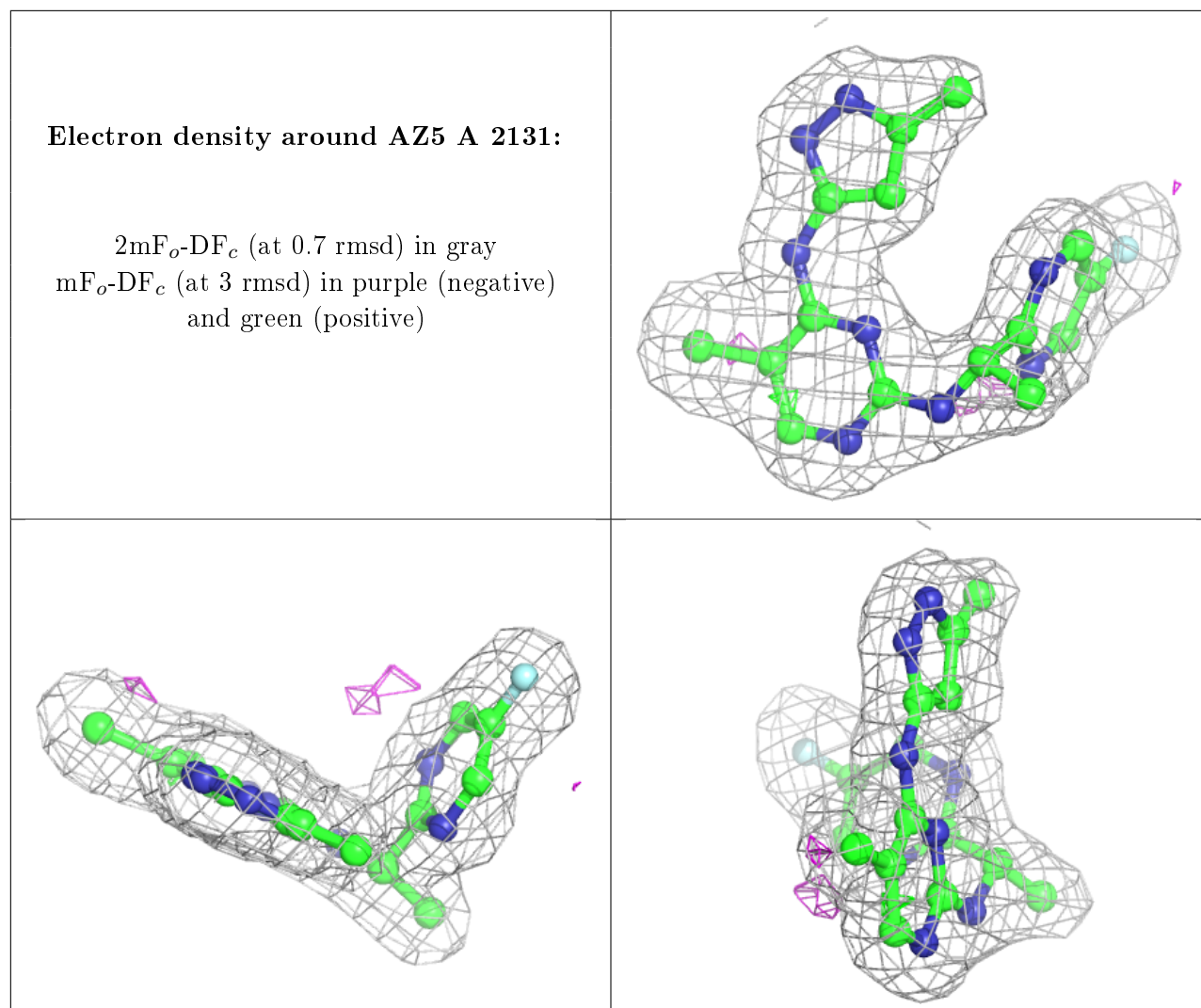## 6.3 Carbohydrates (i)

There are no carbohydrates in this entry.

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	AZ5	B	2132	24/24	0.96	0.13	32,35,38,43	0
2	AZ5	A	2131	24/24	0.97	0.15	28,32,35,36	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 AZ5 B 2132:

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

Electron density around AZ5 A 2131:

$2mF_o$-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.