Full wwPDB X-ray Structure Validation Report ⓘ

Mar 27, 2025 – 10:32 AM EDT

PDB ID	:	7I2E
Title	:	Group deposition for crystallographic fragment screening of the NS5 RNA-dependent RNA polymerase from Dengue virus serotype 2 – Crystal structure of the NS5 RNA-dependent RNA polymerase from Dengue virus serotype 2 in complex with Z740611958 (DNV2_NS5A-x0264)
Authors	:	Aschenbrenner, J.C.; Saini, M.; Chopra, A.; Marples, P.G.; Balcomb, B.H.; Lithgo, R.M.; Fearon, D.; von Delft, F.; Ruiz, F.X.; Arnold, E.
Deposited on	:	2025-03-06
Resolution	:	1.72 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 ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

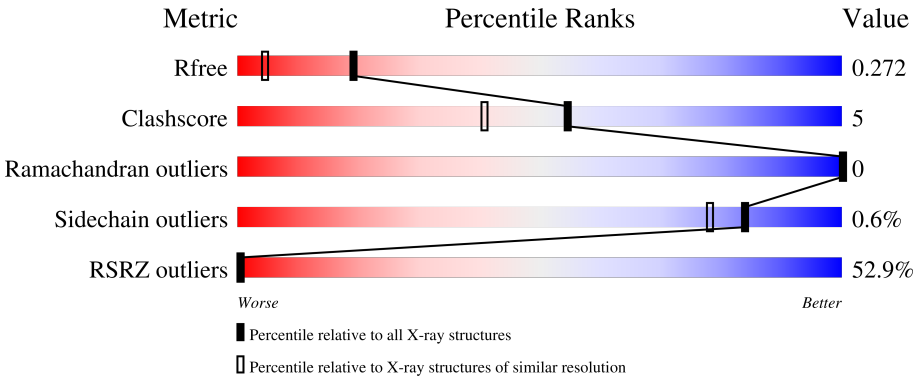
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)

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 1.72 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	7106 (1.74-1.70)
Clashscore	180529	7746 (1.74-1.70)
Ramachandran outliers	177936	7654 (1.74-1.70)
Sidechain outliers	177891	7654 (1.74-1.70)
RSRZ outliers	164620	7104 (1.74-1.70)

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	637	48% 83% 7% 10%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.41.4

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	DMS	A	1004	-	-	X	-
5	PO4	A	1006	-	X	X	-
7	A1BZQ	A	1009	-	-	-	X

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 5213 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 NS5 RNA-dependent RNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	573	4740	2985	850	871	34	0	7	0

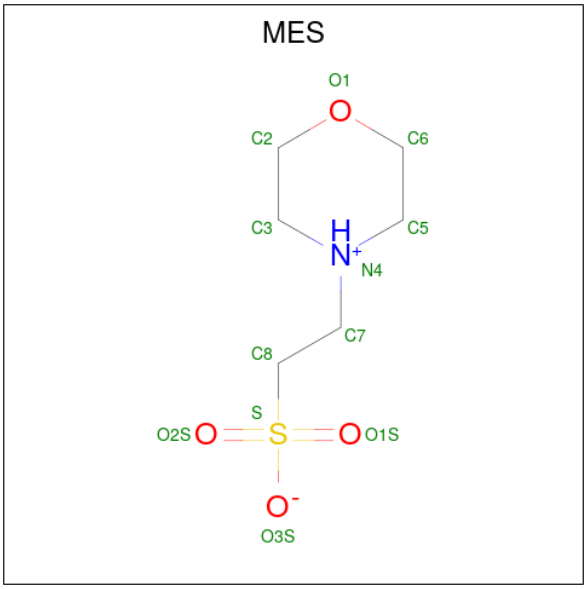
There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	264	GLY	-	expression tag	UNP Q91H74
A	265	PRO	-	expression tag	UNP Q91H74

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

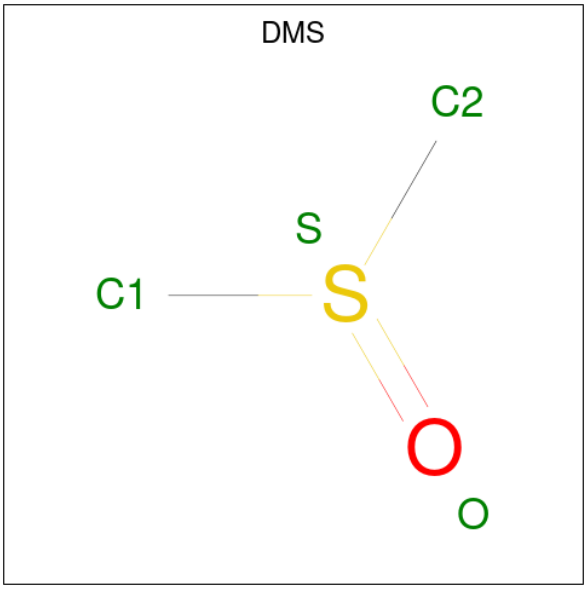
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Zn		
2	A	2	2	2	0	0

- Molecule 3 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: $C_6H_{13}NO_4S$).



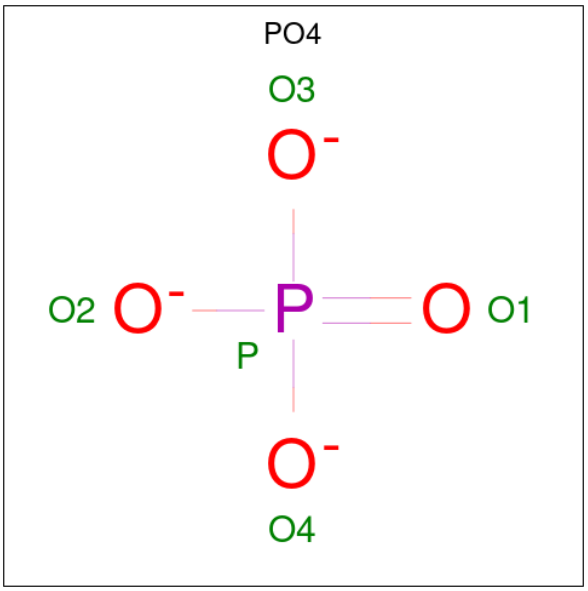
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	S	0	1
			24	12	2	8	2		

- Molecule 4 is DIMETHYL SULFOXIDE (three-letter code: DMS) (formula: C_2H_6OS).



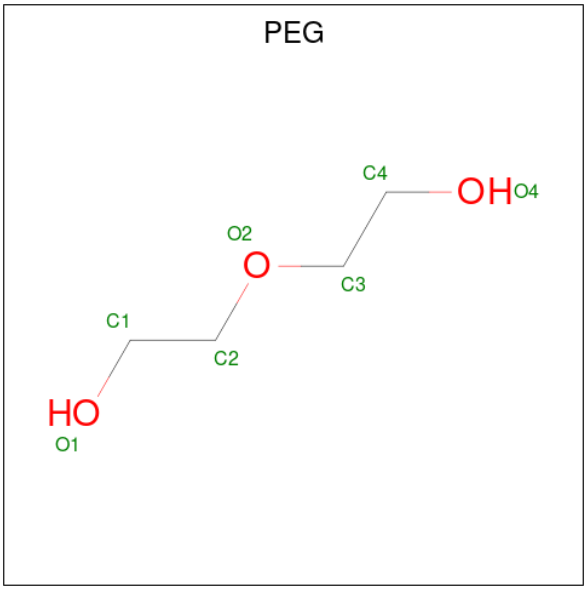
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	O	S	0	0
			4	2	1	1		
4	A	1	Total	C	O	S	0	0
			4	2	1	1		

- Molecule 5 is PHOSPHATE ION (three-letter code: PO4) (formula: O_4P).



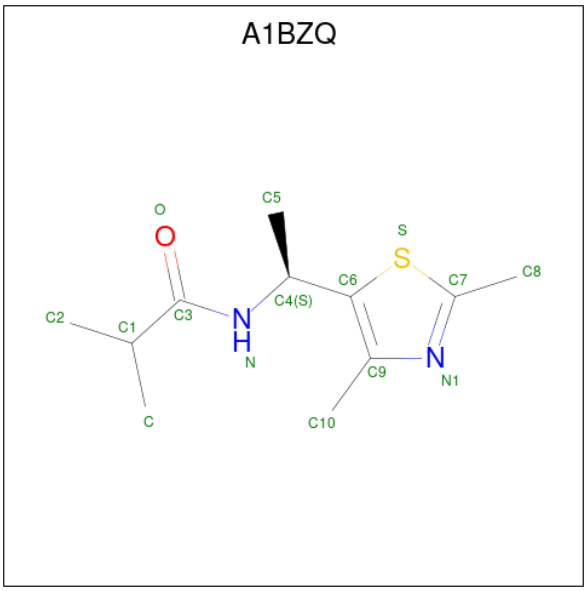
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total O P 5 4 1	0	0
5	A	1	Total O P 5 4 1	0	0

- Molecule 6 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total C O 7 4 3	0	0

- Molecule 7 is N-[(1R)-1-(2,4-dimethyl-1,3-thiazol-5-yl)ethyl]-2-methylpropanamide (three-letter code: A1BZQ) (formula: $C_{11}H_{18}N_2OS$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total C N O S 15 11 2 1 1	0	0

- Molecule 8 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	1	Total Cl 1 1	0	0

- Molecule 9 is water.

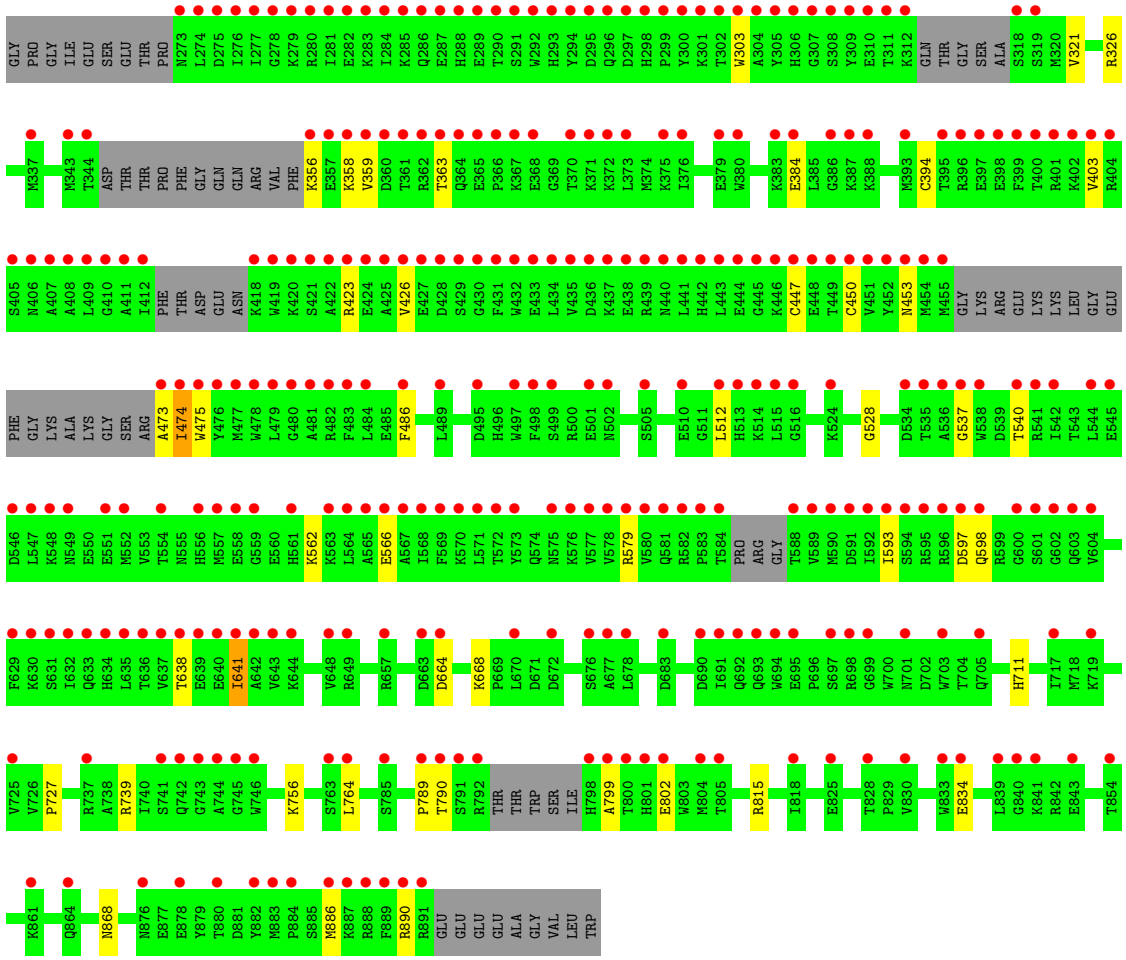
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	406	Total O 406 406	0	0

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: NS5 RNA-dependent RNA polymerase

Chain A:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	82.49Å 116.86Å 148.92Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	74.50 – 1.72 74.50 – 1.72	Depositor EDS
% Data completeness (in resolution range)	97.2 (74.50-1.72) 97.2 (74.50-1.72)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.00 (at 1.72Å)	Xtriage
Refinement program	REFMAC 5.8.0267, REFMAC5	Depositor
R, R_{free}	0.193 , 0.228 0.251 , 0.272	Depositor DCC
R_{free} test set	3924 reflections (5.14%)	wwPDB-VP
Wilson B-factor (Å^2)	31.7	Xtriage
Anisotropy	0.154	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 222.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.85	EDS
Total number of atoms	5213	wwPDB-VP
Average B, all atoms (Å^2)	47.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.08% 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: A1BZQ, PO4, DMS, PEG, MES, ZN, CL

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	0.78	0/4845	0.85	2/6531 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	739	ARG	NE-CZ-NH1	7.32	123.96	120.30
1	A	815	ARG	NE-CZ-NH2	-5.25	117.67	120.30

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	4740	0	4645	41	0
2	A	2	0	0	0	0
3	A	24	0	26	0	0
4	A	8	0	12	4	0
5	A	10	0	0	2	0
6	A	7	0	10	0	0
7	A	15	0	0	0	0
8	A	1	0	0	0	0
9	A	406	0	0	15	1

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	5213	0	4693	45	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 5.

All (45) 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:384:GLU:HG2	9:A:1101:HOH:O	1.51	1.10
1:A:473:ALA:C	1:A:474:ILE:HD12	1.88	0.94
1:A:664:ASP:OD1	5:A:1006:PO4:O4	2.00	0.79
1:A:474:ILE:HD12	1:A:474:ILE:N	1.99	0.78
1:A:384:GLU:CG	9:A:1101:HOH:O	2.17	0.77
1:A:384:GLU:OE2	9:A:1101:HOH:O	2.06	0.72
1:A:384:GLU:CD	9:A:1101:HOH:O	2.31	0.66
1:A:664:ASP:OD1	5:A:1006:PO4:P	2.62	0.57
1:A:358:LYS:HG3	1:A:540:THR:HG21	1.86	0.57
4:A:1004:DMS:C1	9:A:1226:HOH:O	2.53	0.57
1:A:474:ILE:N	1:A:474:ILE:CD1	2.68	0.57
1:A:756:LYS:HG2	1:A:789:PRO:HG3	1.88	0.56
1:A:638:THR:HA	1:A:641:ILE:HG22	1.89	0.55
1:A:447:CYS:SG	1:A:450:CYS:HB2	2.48	0.54
1:A:303:TRP:HE1	1:A:359:VAL:HG22	1.72	0.54
1:A:453:ASN:ND2	1:A:579:ARG:HD2	2.24	0.53
1:A:834:GLU:OE2	1:A:890:ARG:NE	2.42	0.52
1:A:403:VAL:HG21	1:A:426:VAL:HG11	1.92	0.52
1:A:799:ALA:HB1	9:A:1388:HOH:O	2.10	0.51
1:A:528:GLY:O	1:A:668:LYS:HE3	2.11	0.50
1:A:638:THR:HA	1:A:641:ILE:CG2	2.41	0.50
4:A:1004:DMS:H12	9:A:1285:HOH:O	2.13	0.49
1:A:423:ARG:O	1:A:426:VAL:HG22	2.13	0.48
1:A:356:LYS:HG3	1:A:359:VAL:H	1.78	0.48
1:A:363:THR:HG23	9:A:1276:HOH:O	2.12	0.48
1:A:562:LYS:NZ	9:A:1111:HOH:O	2.41	0.48
1:A:475:TRP:CD1	1:A:475:TRP:N	2.83	0.47
1:A:358:LYS:HE2	1:A:537:GLY:HA3	1.96	0.47
1:A:790:THR:HG22	9:A:1353:HOH:O	2.15	0.46
1:A:562:LYS:HE3	1:A:566:GLU:OE2	2.15	0.46
4:A:1004:DMS:H13	9:A:1226:HOH:O	2.13	0.46
1:A:597:ASP:O	1:A:598:GLN:HB2	2.16	0.45
1:A:512[B]:LEU:HD11	1:A:711:HIS:NE2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:868:ASN:OD1	9:A:1102:HOH:O	2.21	0.45
1:A:886:MET:HE1	9:A:1240:HOH:O	2.18	0.43
1:A:303:TRP:CD2	1:A:593:ILE:HD12	2.52	0.43
1:A:321:VAL:HG11	1:A:326:ARG:CZ	2.48	0.43
1:A:356:LYS:HE3	1:A:358:LYS:HB3	2.01	0.43
1:A:356:LYS:HG3	1:A:358:LYS:H	1.83	0.43
1:A:512[B]:LEU:HD22	1:A:727:PRO:HB3	2.00	0.43
1:A:886:MET:CE	9:A:1240:HOH:O	2.67	0.41
1:A:802:GLU:OE2	1:A:802:GLU:N	2.53	0.41
1:A:638:THR:O	1:A:641:ILE:HG23	2.21	0.40
4:A:1004:DMS:H11	9:A:1226:HOH:O	2.16	0.40
1:A:394:CYS:HB3	1:A:486:PHE:CE2	2.57	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)
9:A:1145:HOH:O	9:A:1145:HOH:O[2_445]	1.72	0.48

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	566/637 (89%)	546 (96%)	20 (4%)	0	100 100

There are no Ramachandran outliers to report.

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	509/554 (92%)	506 (99%)	3 (1%)	84 78

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	474	ILE
1	A	641	ILE
1	A	764	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	786	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)

Of 11 ligands modelled in this entry, 3 are monoatomic - leaving 8 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	MES	A	1003[A]	-	12,12,12	0.81	0	15,16,16	0.71	0
5	PO4	A	1007	-	4,4,4	1.43	1 (25%)	6,6,6	0.52	0
4	DMS	A	1004	-	3,3,3	0.81	0	3,3,3	0.66	0
4	DMS	A	1005	-	3,3,3	0.41	0	3,3,3	0.07	0
5	PO4	A	1006	-	4,4,4	4.67	4 (100%)	6,6,6	1.30	1 (16%)
6	PEG	A	1008	-	6,6,6	0.19	0	5,5,5	0.23	0
3	MES	A	1003[B]	-	12,12,12	0.70	0	15,16,16	0.30	0
7	A1BZQ	A	1009	-	11,15,15	0.87	1 (9%)	11,21,21	0.53	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	MES	A	1003[B]	-	-	5/6/14/14	0/1/1/1
3	MES	A	1003[A]	-	-	3/6/14/14	0/1/1/1
7	A1BZQ	A	1009	-	-	0/8/12/12	0/1/1/1
6	PEG	A	1008	-	-	3/4/4/4	-

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	1006	PO4	P-O1	6.77	1.66	1.50
5	A	1006	PO4	P-O2	5.21	1.69	1.54
5	A	1006	PO4	P-O3	2.97	1.63	1.54
7	A	1009	A1BZQ	C9-C6	-2.74	1.36	1.42
5	A	1007	PO4	P-O1	2.51	1.56	1.50
5	A	1006	PO4	P-O4	-2.33	1.47	1.54

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	1006	PO4	O4-P-O2	2.15	114.61	107.91

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1003[A]	MES	C7-C8-S-O2S

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Mol	Chain	Res	Type	Atoms
3	A	1003[A]	MES	C7-C8-S-O3S
3	A	1003[B]	MES	C8-C7-N4-C3
3	A	1003[B]	MES	C7-C8-S-O2S
3	A	1003[B]	MES	C7-C8-S-O3S
6	A	1008	PEG	O2-C3-C4-O4
3	A	1003[B]	MES	C8-C7-N4-C5
3	A	1003[A]	MES	C7-C8-S-O1S
3	A	1003[B]	MES	C7-C8-S-O1S
6	A	1008	PEG	C4-C3-O2-C2
6	A	1008	PEG	C1-C2-O2-C3

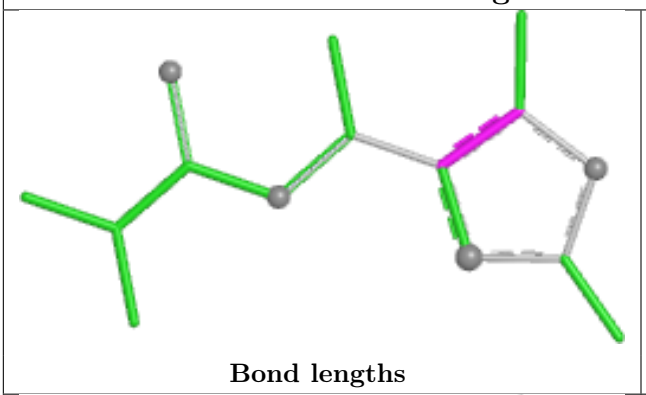
There are no ring outliers.

2 monomers are involved in 6 short contacts:

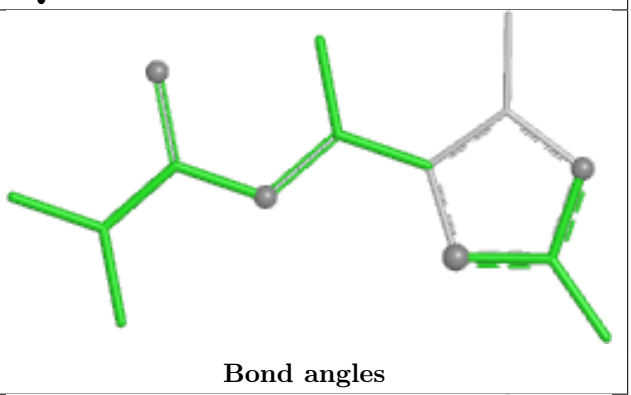
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1004	DMS	4	0
5	A	1006	PO4	2	0

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 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.

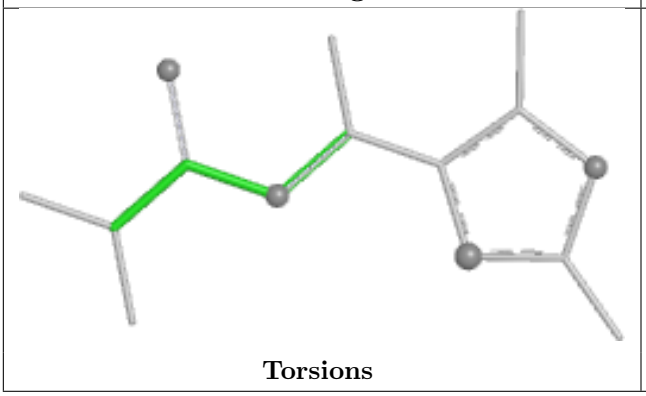
Ligand A1BZQ A 1009



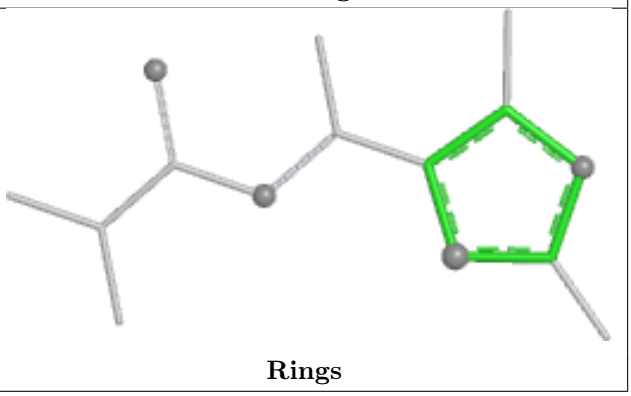
Bond lengths



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

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	573/637 (89%)	4.59	303 (52%)	0	0	4, 31, 75, 119	134 (23%)

All (303) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	580	VAL	21.4
1	A	380	TRP	20.4
1	A	589	VAL	19.8
1	A	303	TRP	19.7
1	A	725	VAL	19.5
1	A	304	ALA	19.4
1	A	478	TRP	19.3
1	A	281	ILE	19.2
1	A	411	ALA	19.2
1	A	512[A]	LEU	19.1
1	A	515	LEU	19.0
1	A	435	VAL	18.8
1	A	309	TYR	18.4
1	A	483	PHE	18.3
1	A	805	THR	18.3
1	A	292	TRP	18.2
1	A	601	SER	18.1
1	A	498	PHE	18.0
1	A	600	GLY	18.0
1	A	839	LEU	17.7
1	A	412	ILE	17.6
1	A	305	TYR	17.5
1	A	432	TRP	17.4
1	A	409	LEU	17.3
1	A	403	VAL	17.1
1	A	516	GLY	17.1
1	A	359	VAL	16.6

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Mol	Chain	Res	Type	RSRZ
1	A	474	ILE	16.5
1	A	741[A]	SER	16.5
1	A	505	SER	16.3
1	A	400	THR	16.0
1	A	790	THR	15.8
1	A	499	SER	15.8
1	A	434	LEU	15.7
1	A	299	PRO	15.5
1	A	481	ALA	15.4
1	A	294	TYR	15.4
1	A	546	ASP	15.4
1	A	311	THR	15.3
1	A	408	ALA	14.8
1	A	588	THR	14.8
1	A	575	ASN	14.7
1	A	278	GLY	14.6
1	A	551[A]	GLU	14.5
1	A	513	HIS	14.4
1	A	356	LYS	14.3
1	A	280	ARG	14.2
1	A	431	PHE	14.1
1	A	283	LYS	14.0
1	A	290	THR	13.9
1	A	582	ARG	13.8
1	A	426	VAL	13.8
1	A	514	LYS	13.8
1	A	479	LEU	13.7
1	A	279	LYS	13.7
1	A	840	GLY	13.6
1	A	477	MET	13.6
1	A	801	HIS	13.6
1	A	480	GLY	13.4
1	A	657	ARG	13.4
1	A	430	GLY	13.3
1	A	541	ARG	13.0
1	A	384	GLU	13.0
1	A	387	LYS	13.0
1	A	361	THR	13.0
1	A	419	TRP	12.9
1	A	407	ALA	12.8
1	A	737	ARG	12.7
1	A	800	THR	12.7

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Mol	Chain	Res	Type	RSRZ
1	A	548	LYS	12.6
1	A	302	THR	12.6
1	A	306	HIS	12.6
1	A	798	HIS	12.6
1	A	298	HIS	12.5
1	A	502	ASN	12.5
1	A	742	GLN	12.4
1	A	576	LYS	12.4
1	A	383	LYS	12.2
1	A	293	HIS	12.1
1	A	358	LYS	12.0
1	A	405	SER	12.0
1	A	482	ARG	12.0
1	A	402	LYS	11.9
1	A	396	ARG	11.9
1	A	473	ALA	11.8
1	A	841	LYS	11.8
1	A	429	SER	11.7
1	A	422	ALA	11.5
1	A	598	GLN	11.4
1	A	581	GLN	11.2
1	A	597	ASP	11.2
1	A	401	ARG	11.2
1	A	603	GLN	11.1
1	A	510	GLU	11.1
1	A	802	GLU	10.8
1	A	799	ALA	10.8
1	A	291	SER	10.8
1	A	843	GLU	10.8
1	A	425	ALA	10.7
1	A	595	ARG	10.6
1	A	404	ARG	10.5
1	A	433	GLU	10.5
1	A	362	ARG	10.3
1	A	791	SER	10.3
1	A	312	LYS	10.2
1	A	406	ASN	10.1
1	A	596	ARG	10.1
1	A	295	ASP	10.1
1	A	287	GLU	10.0
1	A	360	ASP	9.8
1	A	423	ARG	9.8

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Mol	Chain	Res	Type	RSRZ
1	A	297	ASP	9.7
1	A	691	ILE	9.3
1	A	289	GLU	9.2
1	A	421	SER	9.1
1	A	792	ARG	9.1
1	A	424	GLU	9.0
1	A	697	SER	8.7
1	A	501	GLU	8.6
1	A	428	ASP	8.6
1	A	410	GLY	8.2
1	A	282	GLU	8.1
1	A	418	LYS	8.1
1	A	785[A]	SER	8.0
1	A	583	PRO	7.9
1	A	420	LYS	7.9
1	A	310	GLU	7.8
1	A	357	GLU	7.8
1	A	441	LEU	7.7
1	A	364	GLN	7.6
1	A	274	LEU	7.5
1	A	590	MET	7.4
1	A	475	TRP	7.3
1	A	296	GLN	7.3
1	A	286	GLN	7.3
1	A	719[A]	LYS	7.2
1	A	572	THR	7.1
1	A	275	ASP	6.9
1	A	427	GLU	6.9
1	A	695	GLU	6.8
1	A	763[A]	SER	6.7
1	A	670	LEU	6.6
1	A	449	THR	6.6
1	A	476	TYR	6.5
1	A	698	ARG	6.5
1	A	584	THR	6.4
1	A	864[A]	GLN	6.4
1	A	571	LEU	6.4
1	A	451	VAL	6.3
1	A	634	HIS	6.2
1	A	635	LEU	6.2
1	A	705	GLN	6.1
1	A	744	ALA	6.1

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Mol	Chain	Res	Type	RSRZ
1	A	344	THR	6.1
1	A	579	ARG	6.1
1	A	745	GLY	6.0
1	A	889	PHE	6.0
1	A	448	GLU	5.9
1	A	445	GLY	5.7
1	A	284	ILE	5.7
1	A	452	TYR	5.7
1	A	604	VAL	5.6
1	A	637	VAL	5.6
1	A	484	LEU	5.3
1	A	564	LEU	5.3
1	A	288	HIS	5.3
1	A	440	ASN	5.3
1	A	453	ASN	5.3
1	A	365	GLU	5.3
1	A	694	TRP	5.3
1	A	592	ILE	5.2
1	A	593	ILE	5.2
1	A	890	ARG	5.1
1	A	693	GLN	5.0
1	A	825	GLU	5.0
1	A	455	MET	5.0
1	A	300	TYR	4.9
1	A	276	ILE	4.9
1	A	746	TRP	4.8
1	A	882	TYR	4.8
1	A	701	ASN	4.8
1	A	649	ARG	4.7
1	A	436	ASP	4.6
1	A	641	ILE	4.5
1	A	442	HIS	4.5
1	A	545	GLU	4.5
1	A	544	LEU	4.5
1	A	363	THR	4.5
1	A	830	VAL	4.5
1	A	277	ILE	4.4
1	A	437	LYS	4.4
1	A	891	ARG	4.4
1	A	743	GLY	4.4
1	A	444	GLU	4.4
1	A	495	ASP	4.4

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Mol	Chain	Res	Type	RSRZ
1	A	563	LYS	4.4
1	A	876	ASN	4.3
1	A	578	VAL	4.3
1	A	285	LYS	4.3
1	A	367	LYS	4.3
1	A	446	LYS	4.3
1	A	318	SER	4.2
1	A	888	ARG	4.2
1	A	397	GLU	4.1
1	A	308	SER	4.1
1	A	443	LEU	4.1
1	A	370	THR	4.0
1	A	393	MET	4.0
1	A	648	VAL	4.0
1	A	880	THR	4.0
1	A	399	PHE	4.0
1	A	540	THR	3.9
1	A	439	ARG	3.9
1	A	629	PHE	3.9
1	A	632	ILE	3.7
1	A	677	ALA	3.7
1	A	454	MET	3.7
1	A	884	PRO	3.7
1	A	565	ALA	3.7
1	A	577	VAL	3.6
1	A	602	GLY	3.6
1	A	301	LYS	3.5
1	A	683	ASP	3.5
1	A	699	GLY	3.5
1	A	372	LYS	3.5
1	A	537	GLY	3.5
1	A	307	GLY	3.4
1	A	834	GLU	3.4
1	A	376	ILE	3.3
1	A	638	THR	3.3
1	A	273	ASN	3.3
1	A	536	ALA	3.3
1	A	319	SER	3.3
1	A	570	LYS	3.2
1	A	366	PRO	3.1
1	A	636	THR	3.0
1	A	552	MET	3.0

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Mol	Chain	Res	Type	RSRZ
1	A	567	ALA	3.0
1	A	887	LYS	3.0
1	A	633	GLN	3.0
1	A	557	MET	3.0
1	A	591	ASP	2.9
1	A	594	SER	2.9
1	A	690	ASP	2.9
1	A	643	VAL	2.9
1	A	524	LYS	2.9
1	A	703	TRP	2.8
1	A	371	LYS	2.8
1	A	886	MET	2.8
1	A	438	GLU	2.8
1	A	368	GLU	2.8
1	A	549	ASN	2.7
1	A	818	ILE	2.7
1	A	630	LYS	2.7
1	A	375	LYS	2.7
1	A	883	MET	2.7
1	A	854	THR	2.7
1	A	450	CYS	2.7
1	A	558	GLU	2.7
1	A	676	SER	2.6
1	A	497	TRP	2.6
1	A	569	PHE	2.6
1	A	556	HIS	2.6
1	A	828	THR	2.6
1	A	398	GLU	2.6
1	A	486	PHE	2.5
1	A	561	HIS	2.5
1	A	789	PRO	2.5
1	A	447	CYS	2.5
1	A	566	GLU	2.5
1	A	373	LEU	2.4
1	A	861	LYS	2.4
1	A	554	THR	2.4
1	A	337	MET	2.4
1	A	489	LEU	2.4
1	A	717	ILE	2.4
1	A	573	TYR	2.4
1	A	663	ASP	2.4
1	A	764	LEU	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	642	ALA	2.3
1	A	559	GLY	2.3
1	A	388	LYS	2.3
1	A	395	THR	2.2
1	A	644	LYS	2.2
1	A	678	LEU	2.2
1	A	379	GLU	2.2
1	A	640	GLU	2.2
1	A	833	TRP	2.2
1	A	535	THR	2.2
1	A	568	ILE	2.2
1	A	534	ASP	2.2
1	A	542	ILE	2.1
1	A	547	LEU	2.1
1	A	639	GLU	2.1
1	A	538	TRP	2.1
1	A	804	MET	2.1
1	A	878	GLU	2.1
1	A	631	SER	2.1
1	A	672	ASP	2.1
1	A	692	GLN	2.1
1	A	343	MET	2.0
1	A	386	GLY	2.0
1	A	664	ASP	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 monosaccharides in this entry.

6.4 Ligands (i)

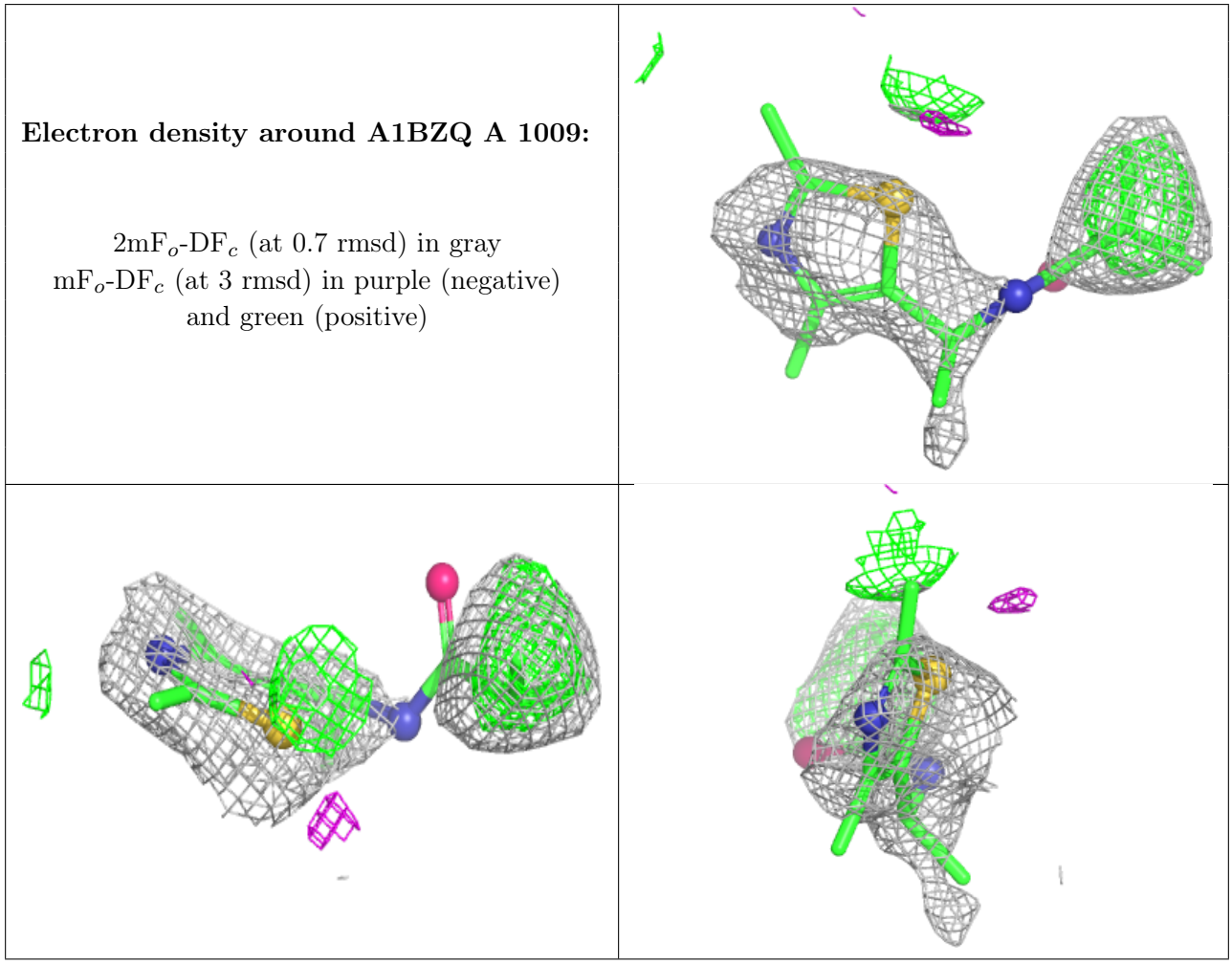
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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
7	A1BZQ	A	1009	15/15	0.64	0.43	28,33,36,38	15
4	DMS	A	1005	4/4	0.68	0.33	76,98,106,126	0
5	PO4	A	1007	5/5	0.75	0.18	72,78,99,113	0
6	PEG	A	1008	7/7	0.78	0.21	64,69,79,81	0
5	PO4	A	1006	5/5	0.79	0.17	40,40,59,69	0
4	DMS	A	1004	4/4	0.83	0.23	41,50,54,55	0
3	MES	A	1003[A]	12/12	0.95	0.33	24,26,28,29	12
3	MES	A	1003[B]	12/12	0.95	0.33	629,645,678,682	12
8	CL	A	1010	1/1	0.97	0.08	40,40,40,40	0
2	ZN	A	1002	1/1	0.98	0.04	53,53,53,53	0
2	ZN	A	1001	1/1	1.00	0.01	22,22,22,22	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 A1BZQ A 1009:

$2mF_o$-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.