



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 13, 2023 – 05:46 PM EST

PDB ID : 8TSD
Title : Human PI3K p85alpha/p110alpha bound to RLY-2608
Authors : Holliday, M.; Tang, Y.; Bulku, A.; Wilbur, J.; Fraser, J.
Deposited on : 2023-08-11
Resolution : 2.70 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 : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36
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) : 2.36

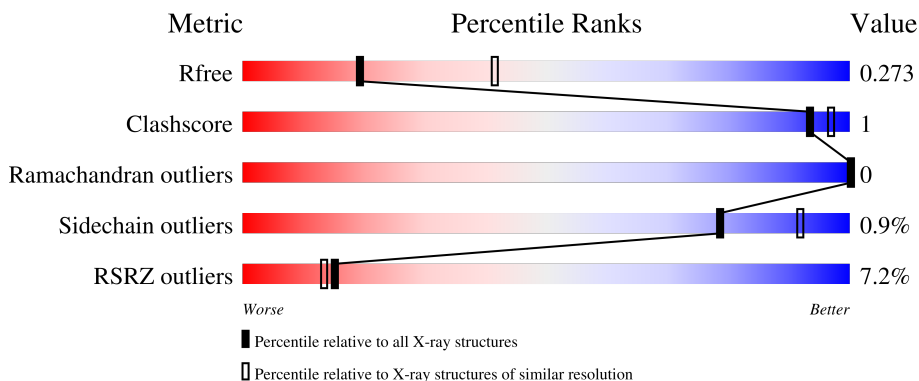
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

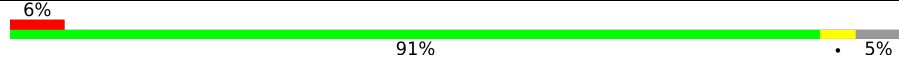

The reported resolution of this entry is 2.70 Å.

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	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)

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 $\leq 5\%$. 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	1063	 6% 91% 5%
2	B	300	 8% 84% 6% 10%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 21060 atoms, of which 10525 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 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit alpha isoform.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	A	1005	16437	5246	8237	1401	1485	68	47	0	0

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-9	GLY	-	expression tag	UNP P42336
A	-8	SER	-	expression tag	UNP P42336
A	-7	PRO	-	expression tag	UNP P42336
A	-6	GLY	-	expression tag	UNP P42336
A	-5	ILE	-	expression tag	UNP P42336
A	-4	SER	-	expression tag	UNP P42336
A	-3	GLY	-	expression tag	UNP P42336
A	-2	GLY	-	expression tag	UNP P42336
A	-1	GLY	-	expression tag	UNP P42336
A	0	GLY	-	expression tag	UNP P42336
A	1	GLY	-	expression tag	UNP P42336

- Molecule 2 is a protein called Phosphatidylinositol 3-kinase regulatory subunit alpha.

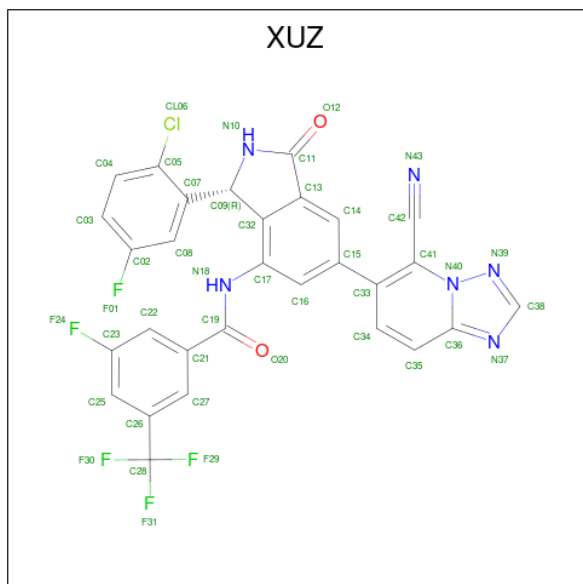
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
2	B	270	4566	1435	2274	409	442	6	63	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	316	GLY	-	expression tag	UNP P27986
B	317	PRO	-	expression tag	UNP P27986

- Molecule 3 is N-((3R,6M)-3-(2-chloro-5-fluorophenyl)-6-((4S)-5-cyano[1,2,4]triazolo[1,5-a

[pyridin-6-yl]-1-oxo-2,3-dihydro-1H-isoindol-4-yl}-3-fluoro-5-(trifluoromethyl)benzamide (three-letter code: XUZ) (formula: C₂₉H₁₄ClF₅N₆O₂) (labeled as "Ligand of Interest" by depositor).

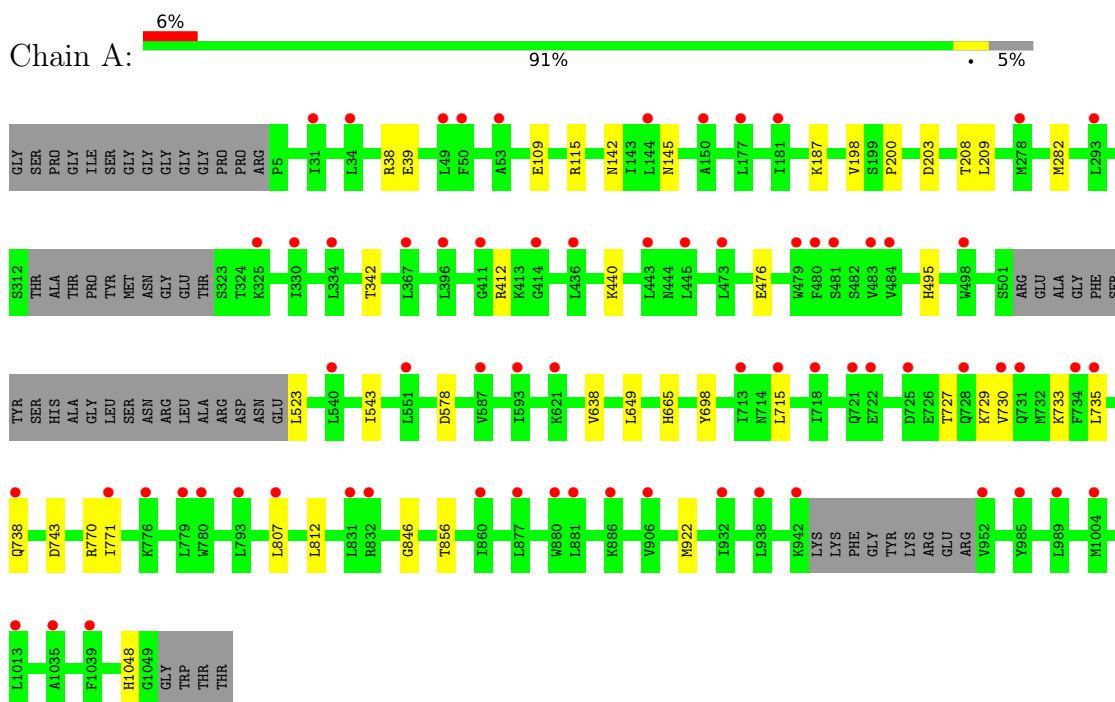


Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	
			Total	C	Cl	F	H	N			O
3	A	1	57	29	1	5	14	6	2	0	0

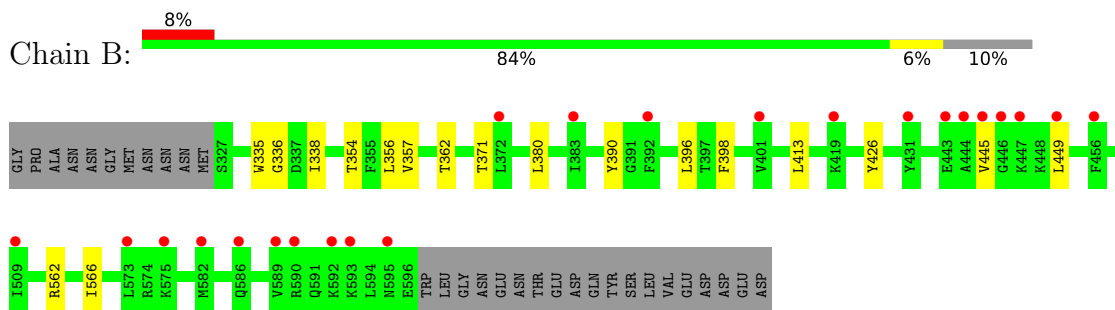
3 Residue-property plots [i](#)

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: Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit alpha isoform



- Molecule 2: Phosphatidylinositol 3-kinase regulatory subunit alpha



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	86.90Å 121.52Å 192.65Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	102.78 – 2.70 102.78 – 2.70	Depositor EDS
% Data completeness (in resolution range)	100.0 (102.78-2.70) 100.0 (102.78-2.70)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.17 (at 2.69Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.239 , 0.277 0.235 , 0.273	Depositor DCC
R_{free} test set	1999 reflections (3.52%)	wwPDB-VP
Wilson B-factor (Å ²)	97.3	Xtrriage
Anisotropy	0.262	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 75.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	21060	wwPDB-VP
Average B, all atoms (Å ²)	130.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.11% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: XUZ

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	0.24	0/8382	0.47	0/11326
2	B	0.24	0/2330	0.48	0/3120
All	All	0.24	0/10712	0.47	0/14446

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

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	8200	8237	8234	20	0
2	B	2292	2274	2273	9	0
3	A	43	14	0	1	0
All	All	10535	10525	10507	29	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 1.

All (29) 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)
2:B:356:LEU:HD23	2:B:357:VAL:N	2.12	0.65
1:A:198:VAL:HG22	1:A:200:PRO:HD2	1.78	0.64
1:A:812:LEU:HD23	3:A:1101:XUZ:F29	1.88	0.63
1:A:543:ILE:HG23	1:A:543:ILE:O	2.11	0.51
1:A:665:HIS:ND1	1:A:698:TYR:OH	2.39	0.50
1:A:807:LEU:HD12	1:A:846:GLY:HA3	1.95	0.49
1:A:208:THR:C	1:A:209:LEU:HD12	2.33	0.49
1:A:142:ASN:O	1:A:145:ASN:ND2	2.47	0.47
2:B:562:ARG:O	2:B:566:ILE:HD13	2.16	0.45
1:A:638:VAL:HG23	1:A:649:LEU:HD21	1.99	0.45
2:B:354:THR:HG22	2:B:426:TYR:HB2	1.99	0.45
1:A:38:ARG:NH1	1:A:743:ASP:OD2	2.47	0.45
1:A:727:THR:OG1	1:A:730:VAL:HG23	2.17	0.44
1:A:39:GLU:OE1	1:A:39:GLU:N	2.49	0.44
1:A:440:LYS:HA	1:A:476:GLU:HA	1.98	0.44
1:A:495:HIS:NE2	1:A:578:ASP:OD1	2.40	0.44
1:A:715:LEU:HD22	1:A:738:GLN:HG2	1.99	0.44
1:A:109:GLU:N	1:A:109:GLU:OE1	2.51	0.43
1:A:856:THR:HG22	1:A:922:MET:HG2	2.01	0.43
1:A:729:LYS:N	1:A:729:LYS:CD	2.82	0.43
1:A:412:ARG:NE	1:A:412:ARG:HA	2.35	0.42
1:A:735:LEU:HD22	1:A:771:ILE:HG23	2.01	0.42
2:B:390:TYR:N	2:B:398:PHE:O	2.53	0.42
1:A:198:VAL:HG12	1:A:203:ASP:O	2.20	0.41
2:B:445:VAL:O	2:B:449:LEU:HB3	2.20	0.41
2:B:335:TRP:CD1	2:B:356:LEU:HD21	2.56	0.41
2:B:371:THR:HG22	2:B:380:LEU:HG	2.03	0.41
2:B:362:THR:HG22	2:B:362:THR:O	2.22	0.40
2:B:336:GLY:O	2:B:338:ILE:N	2.53	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	997/1063 (94%)	953 (96%)	44 (4%)	0	100	100
2	B	268/300 (89%)	253 (94%)	15 (6%)	0	100	100
All	All	1265/1363 (93%)	1206 (95%)	59 (5%)	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	921/963 (96%)	913 (99%)	8 (1%)	78	92
2	B	251/277 (91%)	249 (99%)	2 (1%)	81	93
All	All	1172/1240 (94%)	1162 (99%)	10 (1%)	78	92

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	115	ARG
1	A	187	LYS
1	A	282	MET
1	A	342	THR
1	A	523	LEU
1	A	733	LYS
1	A	770	ARG
1	A	1048	HIS
2	B	396	LEU
2	B	413	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is 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
3	XUZ	A	1101	-	43,48,48	2.28	16 (37%)	58,73,73	1.50	13 (22%)

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	XUZ	A	1101	-	-	3/22/36/36	0/6/6/6

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1101	XUZ	C11-N10	8.53	1.41	1.35
3	A	1101	XUZ	C36-N37	4.27	1.37	1.33
3	A	1101	XUZ	C21-C19	3.45	1.57	1.50
3	A	1101	XUZ	C34-C33	3.39	1.45	1.40
3	A	1101	XUZ	C13-C11	3.37	1.53	1.48
3	A	1101	XUZ	C09-N10	2.96	1.49	1.46
3	A	1101	XUZ	C38-N39	2.93	1.38	1.33
3	A	1101	XUZ	C19-N18	2.77	1.43	1.35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1101	XUZ	C17-N18	2.66	1.46	1.41
3	A	1101	XUZ	C28-C26	2.65	1.55	1.49
3	A	1101	XUZ	C16-C17	2.47	1.43	1.39
3	A	1101	XUZ	C22-C23	2.30	1.41	1.37
3	A	1101	XUZ	C13-C32	2.30	1.41	1.39
3	A	1101	XUZ	C07-C09	2.26	1.55	1.52
3	A	1101	XUZ	C08-C02	2.20	1.41	1.37
3	A	1101	XUZ	C33-C15	2.06	1.53	1.49

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1101	XUZ	O12-C11-N10	-4.72	121.88	125.98
3	A	1101	XUZ	C13-C11-N10	3.31	107.79	106.49
3	A	1101	XUZ	C03-C02-C08	-3.16	119.18	123.29
3	A	1101	XUZ	C14-C13-C11	2.81	132.57	129.66
3	A	1101	XUZ	C07-C08-C02	2.71	122.11	118.59
3	A	1101	XUZ	C21-C22-C23	2.70	121.37	118.45
3	A	1101	XUZ	C21-C19-N18	2.69	121.84	115.92
3	A	1101	XUZ	O20-C19-N18	-2.51	117.97	123.71
3	A	1101	XUZ	F01-C02-C08	2.50	121.82	118.25
3	A	1101	XUZ	C25-C23-C22	-2.50	120.36	123.52
3	A	1101	XUZ	C16-C17-C32	-2.28	118.31	121.07
3	A	1101	XUZ	C14-C13-C32	-2.14	120.00	122.80
3	A	1101	XUZ	C27-C21-C22	-2.08	117.13	119.63

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1101	XUZ	C05-C07-C09-N10
3	A	1101	XUZ	C08-C07-C09-N10
3	A	1101	XUZ	C32-C17-N18-C19

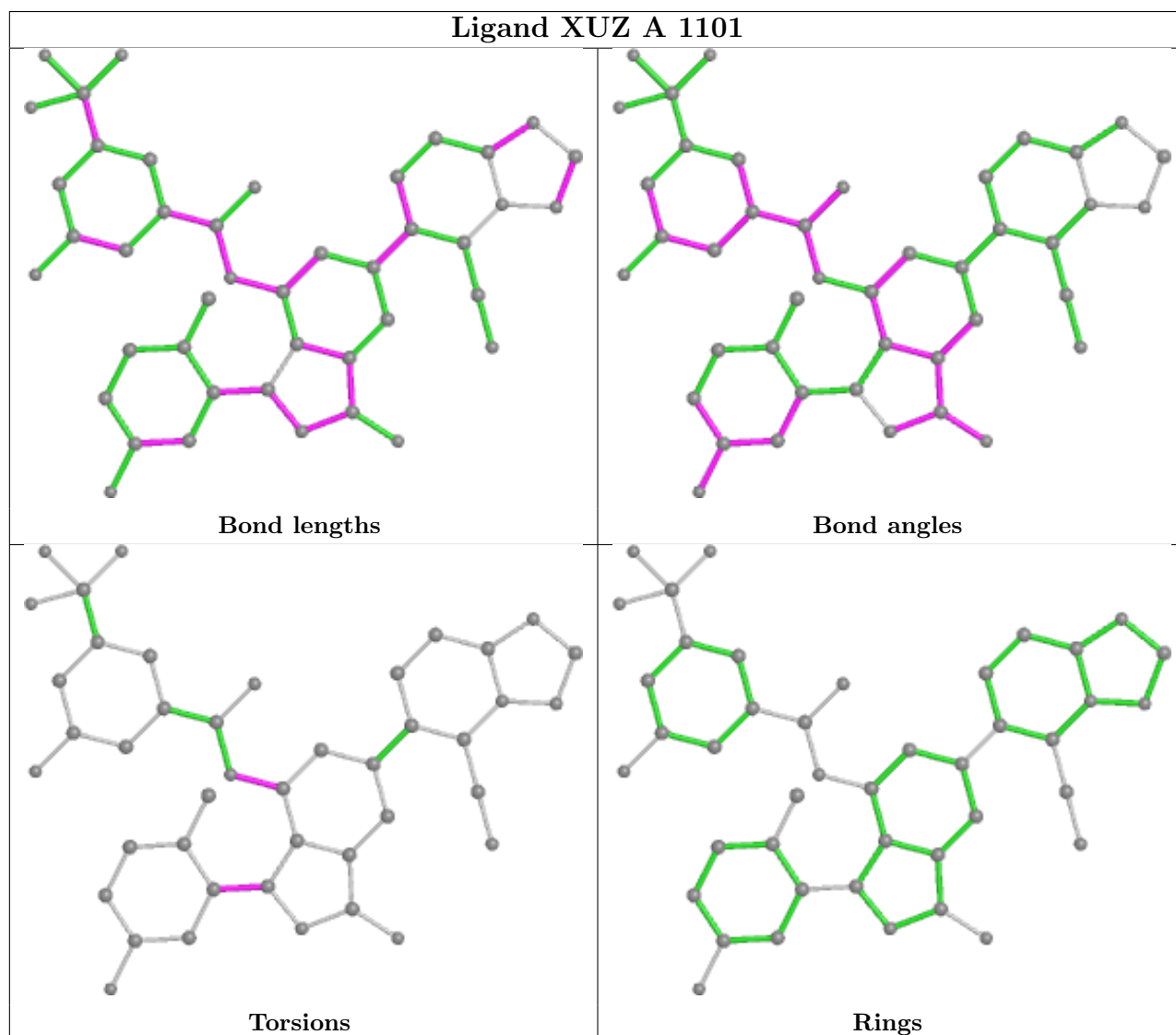
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1101	XUZ	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 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.



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, 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	1005/1063 (94%)	0.60	69 (6%) 16 15	68, 105, 160, 208	3 (0%)
2	B	270/300 (90%)	0.52	23 (8%) 10 9	80, 146, 202, 235	5 (1%)
All	All	1275/1363 (93%)	0.58	92 (7%) 15 13	68, 111, 180, 235	8 (0%)

All (92) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	734	PHE	5.6
1	A	728	GLN	5.3
1	A	181	ILE	5.0
1	A	731	GLN	5.0
1	A	367	LEU	4.4
1	A	480	PHE	4.2
2	B	431	TYR	4.2
1	A	481	SER	4.0
2	B	593	LYS	4.0
2	B	401	VAL	4.0
1	A	942	LYS	3.8
1	A	881	LEU	3.7
2	B	445	VAL	3.7
1	A	49	LEU	3.7
1	A	411	GLY	3.7
1	A	414	GLY	3.6
2	B	592	LYS	3.6
2	B	449	LEU	3.6
1	A	730	VAL	3.6
2	B	444	ALA	3.5
1	A	880	TRP	3.3
1	A	779	LEU	3.3
1	A	31	ILE	3.1
1	A	771	ILE	3.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	34	LEU	3.0
2	B	443	GLU	3.0
1	A	593	ILE	2.9
2	B	595	ASN	2.9
1	A	718	ILE	2.9
2	B	589	VAL	2.9
1	A	443	LEU	2.9
1	A	551	LEU	2.8
2	B	447	LYS	2.8
1	A	735	LEU	2.7
1	A	484	VAL	2.7
1	A	479	TRP	2.6
2	B	590	ARG	2.6
2	B	419	LYS	2.5
1	A	498	TRP	2.5
1	A	53	ALA	2.5
1	A	807	LEU	2.5
1	A	938	LEU	2.5
1	A	721	GLN	2.5
2	B	575	LYS	2.5
1	A	860	ILE	2.5
1	A	278	MET	2.5
1	A	985	TYR	2.4
1	A	877	LEU	2.4
1	A	50	PHE	2.4
1	A	445	LEU	2.3
2	B	509	ILE	2.3
1	A	334	LEU	2.3
1	A	1039	PHE	2.3
1	A	483	VAL	2.3
1	A	989	LEU	2.3
1	A	932	ILE	2.3
1	A	587	VAL	2.3
1	A	1004	MET	2.3
1	A	473	LEU	2.2
1	A	793	LEU	2.2
1	A	330	ILE	2.2
2	B	392	PHE	2.2
2	B	456	PHE	2.2
1	A	1035	ALA	2.2
1	A	715	LEU	2.2
1	A	713	ILE	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	540	LEU	2.1
1	A	832	ARG	2.1
1	A	738	GLN	2.1
2	B	586	GLN	2.1
1	A	396	LEU	2.1
1	A	436	LEU	2.1
2	B	573	LEU	2.1
1	A	150	ALA	2.1
1	A	325	LYS	2.1
1	A	293	LEU	2.1
1	A	952	VAL	2.1
1	A	621	LYS	2.1
1	A	780	TRP	2.1
1	A	177	LEU	2.1
2	B	446	GLY	2.1
1	A	831	LEU	2.1
1	A	776	LYS	2.1
1	A	722	GLU	2.1
2	B	383	ILE	2.0
1	A	725	ASP	2.0
2	B	582	MET	2.0
1	A	144	LEU	2.0
1	A	1013	LEU	2.0
1	A	906	VAL	2.0
1	A	886	LYS	2.0
2	B	372	LEU	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 [\(i\)](#)

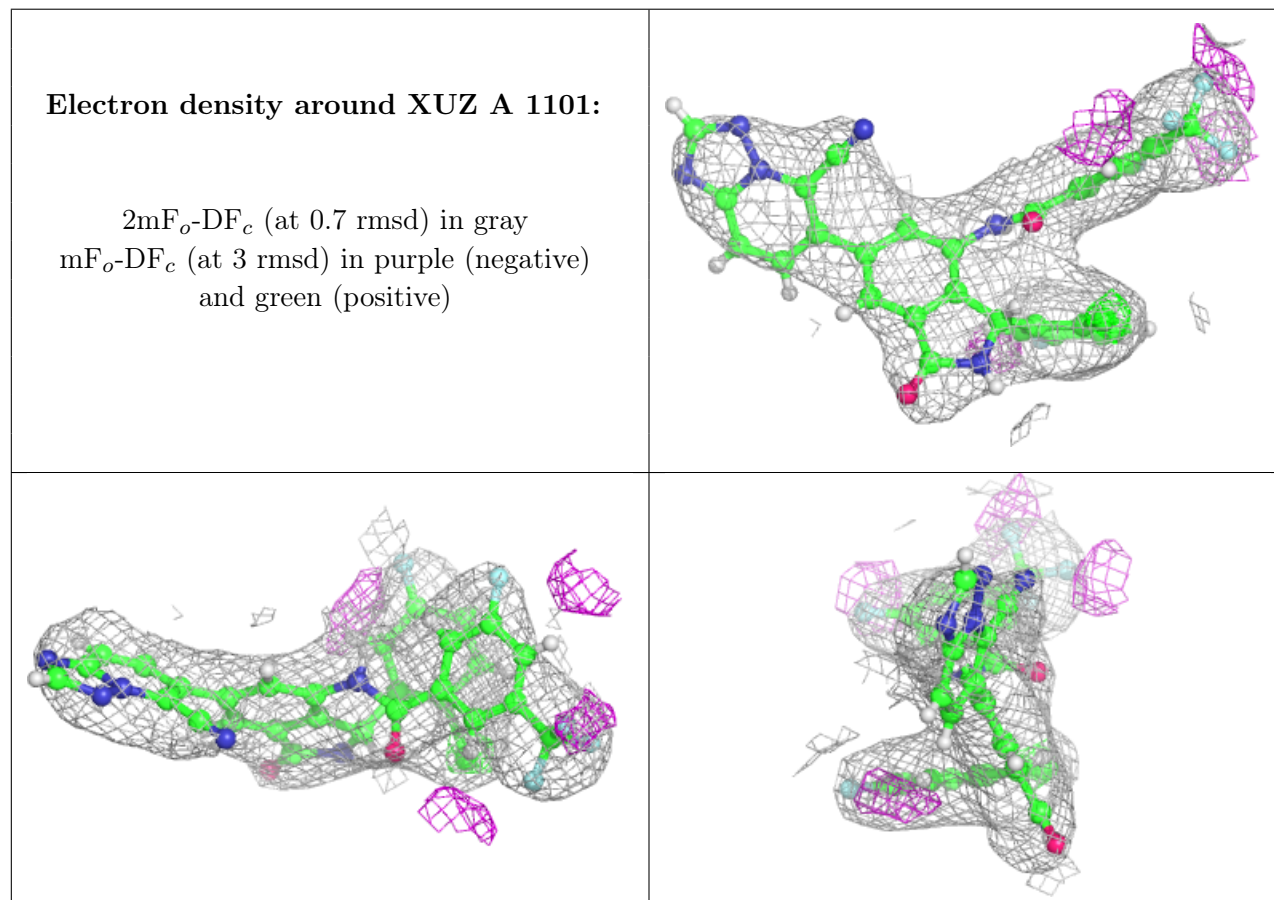
There are no monosaccharides in this entry.

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, 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(\AA^2)	Q<0.9
3	XUZ	A	1101	43/43	0.90	0.25	86,102,142,175	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.



6.5 Other polymers [i](#)

There are no such residues in this entry.