Full wwPDB X-ray Structure Validation Report (i)

Sep 7, 2023 – 10:03 AM EDT

PDB ID	:	4GDY
Title	:	Kynurenine Aminotransferase II inhibitors
Authors	:	Pandit, J.
Deposited on	:	2012-08-01
Resolution	:	2.89 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 types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

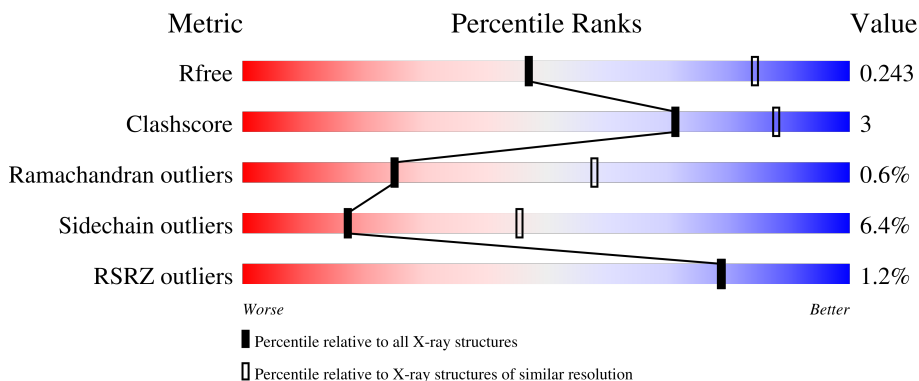|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 2.89 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		0.243
Clashscore		3
Ramachandran outliers		0.6%
Sidechain outliers		6.4%
RSRZ outliers		1.2%

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	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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	439	2% / 83% 10% · 5%
1	B	439	% / 85% 11% ··

2 Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 6880 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 Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	415	Total 3245	C 2083	N 543	O 602	S 17	0	0	0
1	B	428	Total 3344	C 2145	N 561	O 620	S 18	0	0	0

There are 32 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	240	SER	LYS	engineered mutation	UNP Q8N5Z0
A	241	GLY	PHE	engineered mutation	UNP Q8N5Z0
A	426	LEU	-	expression tag	UNP Q8N5Z0
A	427	VAL	-	expression tag	UNP Q8N5Z0
A	428	PRO	-	expression tag	UNP Q8N5Z0
A	429	ARG	-	expression tag	UNP Q8N5Z0
A	430	GLY	-	expression tag	UNP Q8N5Z0
A	431	SER	-	expression tag	UNP Q8N5Z0
A	432	LEU	-	expression tag	UNP Q8N5Z0
A	433	GLU	-	expression tag	UNP Q8N5Z0
A	434	HIS	-	expression tag	UNP Q8N5Z0
A	435	HIS	-	expression tag	UNP Q8N5Z0
A	436	HIS	-	expression tag	UNP Q8N5Z0
A	437	HIS	-	expression tag	UNP Q8N5Z0
A	438	HIS	-	expression tag	UNP Q8N5Z0
A	439	HIS	-	expression tag	UNP Q8N5Z0
B	240	SER	LYS	engineered mutation	UNP Q8N5Z0
B	241	GLY	PHE	engineered mutation	UNP Q8N5Z0
B	426	LEU	-	expression tag	UNP Q8N5Z0
B	427	VAL	-	expression tag	UNP Q8N5Z0
B	428	PRO	-	expression tag	UNP Q8N5Z0
B	429	ARG	-	expression tag	UNP Q8N5Z0
B	430	GLY	-	expression tag	UNP Q8N5Z0
B	431	SER	-	expression tag	UNP Q8N5Z0

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Chain	Residue	Modelled	Actual	Comment	Reference
B	432	LEU	-	expression tag	UNP Q8N5Z0
B	433	GLU	-	expression tag	UNP Q8N5Z0
B	434	HIS	-	expression tag	UNP Q8N5Z0
B	435	HIS	-	expression tag	UNP Q8N5Z0
B	436	HIS	-	expression tag	UNP Q8N5Z0
B	437	HIS	-	expression tag	UNP Q8N5Z0
B	438	HIS	-	expression tag	UNP Q8N5Z0
B	439	HIS	-	expression tag	UNP Q8N5Z0

- Molecule 2 is (5-hydroxy-6-methyl-4-{[(1-oxo-7-phenoxy-1,2-dihydro[1,2,4]triazolo[4,3-a]quinolin-4-yl)amino]methyl}pyridin-3-yl)methyl dihydrogen phosphate (three-letter code: 0X1) (formula: $C_{24}H_{22}N_5O_7P$).
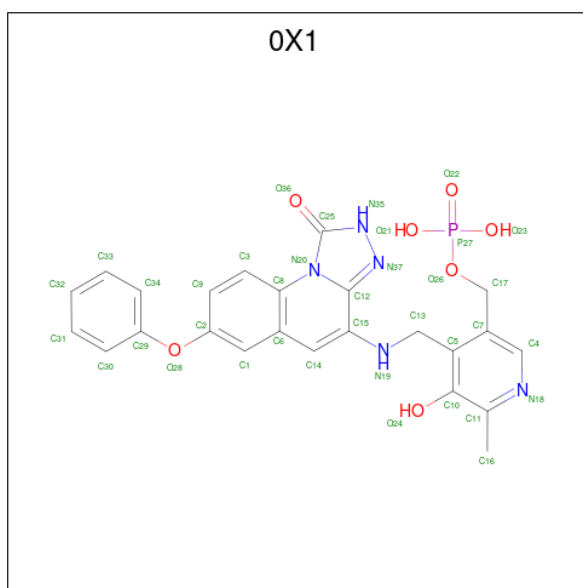
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 37	C 24	N 5	O 7	P 1	0	0
2	B	1	Total 37	C 24	N 5	O 7	P 1	0	0

- Molecule 3 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	94	Total 94	O 94	0	0
3	B	123	Total 123	O 123	0	0

3 Residue-property plots ⓘ

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: Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial
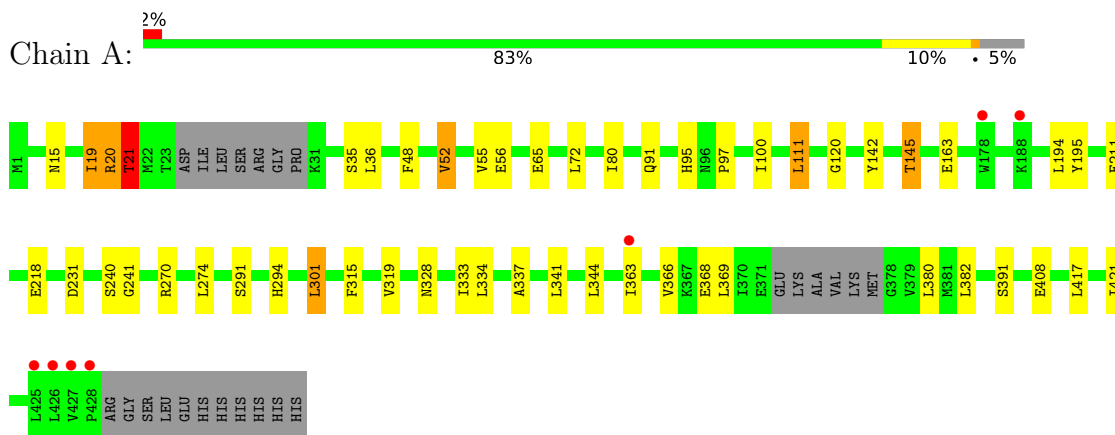
- Molecule 1: Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial
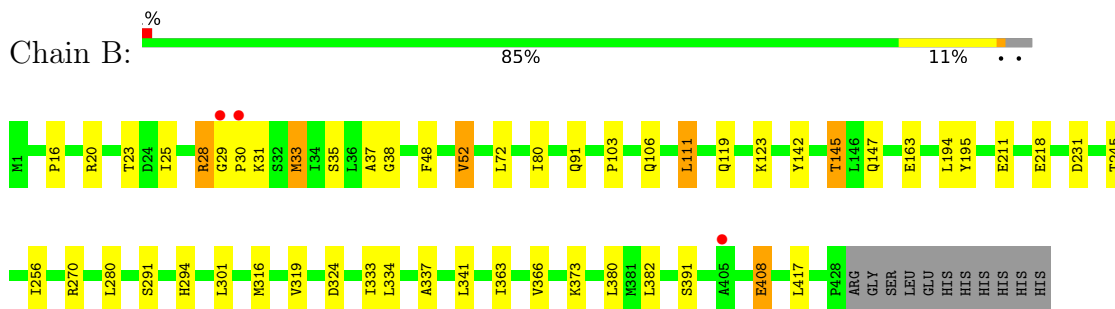
4   Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	116.46Å 116.46Å 115.21Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	100.85 – 2.89 38.12 – 2.89	Depositor EDS
% Data completeness (in resolution range)	99.3 (100.85-2.89) 99.8 (38.12-2.89)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.13	Depositor
$< I/\sigma(I) >$ [1]	5.61 (at 2.90Å)	Xtriage
Refinement program	BUSTER-TNT BUSTER 2.9.3, BUSTER 2.9.3	Depositor
R, R_{free}	0.171 , 0.240 0.171 , 0.243	Depositor DCC
R_{free} test set	1049 reflections (5.11%)	wwPDB-VP
Wilson B-factor (Å^2)	47.4	Xtriage
Anisotropy	0.320	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 67.5	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.024 for -h,-k,l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	6880	wwPDB-VP
Average B, all atoms (Å^2)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.90% 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 ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 0X1

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	0.49	0/3324	0.70	1/4514 (0.0%)
1	B	0.48	0/3426	0.71	0/4653
All	All	0.48	0/6750	0.71	1/9167 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	20	ARG	C-N-CA	5.61	135.73	121.70

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	3245	0	3255	24	0
1	B	3344	0	3366	25	0
2	A	37	0	20	1	0
2	B	37	0	20	2	0
3	A	94	0	0	1	0
3	B	123	0	0	2	0
All	All	6880	0	6661	46	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 3.

All (46) 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:80:ILE:HD13	1:B:301:LEU:HD12	1.70	0.74
1:A:55:VAL:HG12	1:A:56:GLU:H	1.52	0.73
1:A:20:ARG:HA	1:A:21:THR:O	1.94	0.67
1:B:337:ALA:HA	1:B:341:LEU:HD13	1.87	0.56
1:A:337:ALA:HA	1:A:341:LEU:HD13	1.87	0.56
1:B:48:PHE:HB2	1:B:72:LEU:HD11	1.86	0.56
1:B:37:ALA:HB3	1:B:38:GLY:HA2	1.88	0.56
1:A:145:THR:HG21	1:A:195:TYR:CZ	2.41	0.55
1:A:48:PHE:HB2	1:A:72:LEU:HD11	1.89	0.55
1:A:55:VAL:HG12	1:A:56:GLU:N	2.21	0.54
1:A:145:THR:HG21	1:A:195:TYR:OH	2.08	0.54
1:A:142:TYR:HD1	1:A:145:THR:HG22	1.73	0.54
1:B:16:PRO:HB2	1:B:20:ARG:HH22	1.72	0.54
1:B:145:THR:HG21	1:B:195:TYR:CZ	2.43	0.54
1:A:19:ILE:HG23	1:B:382:LEU:HD11	1.92	0.52
1:B:142:TYR:HD1	1:B:145:THR:HG22	1.76	0.51
1:B:145:THR:HG21	1:B:195:TYR:OH	2.10	0.50
1:A:344:LEU:HB3	1:A:421:ILE:HG21	1.95	0.49
1:A:294:HIS:CE1	1:B:270:ARG:HD3	2.48	0.49
1:A:35:SER:HA	1:B:380:LEU:HB2	1.96	0.48
1:B:23:THR:HA	1:B:33:MET:HA	1.96	0.48
1:B:35:SER:OG	1:B:38:GLY:HA3	2.15	0.47
1:A:52:VAL:HG13	1:B:52:VAL:HG13	1.97	0.46
1:A:142:TYR:CD1	1:A:145:THR:HG22	2.50	0.46
1:A:95:HIS:HD2	3:A:687:HOH:O	1.99	0.45
1:A:315:PHE:O	1:A:319:VAL:HG13	2.18	0.44
1:B:256:ILE:HD11	1:B:280:LEU:HD13	1.99	0.44
1:A:15:ASN:HB2	1:B:147:GLN:HE22	1.81	0.44
1:A:55:VAL:CG1	1:A:56:GLU:H	2.27	0.44
1:B:408:GLU:HB2	3:B:698:HOH:O	2.17	0.43
1:B:28:ARG:HG3	1:B:30:PRO:HD2	2.00	0.43
2:A:501:0X1:O24	2:A:501:0X1:N19	2.51	0.43
1:B:142:TYR:CD1	1:B:145:THR:HG22	2.54	0.43
1:A:270:ARG:HD3	1:B:294:HIS:CE1	2.53	0.43
1:B:91:GLN:HG3	1:B:111:LEU:HD11	2.01	0.43
1:A:211:GLU:H	1:A:211:GLU:CD	2.23	0.42
2:B:501:0X1:O24	2:B:501:0X1:N19	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:97:PRO:HD2	1:A:100:ILE:HD11	2.01	0.42
1:B:211:GLU:H	1:B:211:GLU:CD	2.23	0.41
2:B:501:0X1:O36	2:B:501:0X1:H3	2.20	0.41
1:A:91:GLN:HG3	1:A:111:LEU:HD11	2.02	0.41
1:B:103:PRO:HD2	1:B:106:GLN:HB2	2.03	0.41
1:A:120:GLY:HA3	1:A:274:LEU:HD13	2.03	0.40
1:A:80:ILE:HD13	1:A:301:LEU:HD13	2.03	0.40
1:B:119:GLN:O	1:B:123:LYS:HG2	2.22	0.40
1:B:245:THR:HG22	3:B:688:HOH:O	2.21	0.40

There are no symmetry-related clashes.

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	409/439 (93%)	388 (95%)	19 (5%)	2 (0%)	29	61
1	B	426/439 (97%)	404 (95%)	19 (4%)	3 (1%)	22	54
All	All	835/878 (95%)	792 (95%)	38 (5%)	5 (1%)	25	58

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	21	THR
1	B	28	ARG
1	B	25	ILE
1	B	29	GLY
1	A	241	GLY

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	361/382 (94%)	335 (93%)	26 (7%)	14	39
1	B	372/382 (97%)	351 (94%)	21 (6%)	21	52
All	All	733/764 (96%)	686 (94%)	47 (6%)	17	45

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	19	ILE
1	A	21	THR
1	A	36	LEU
1	A	52	VAL
1	A	65	GLU
1	A	111	LEU
1	A	145	THR
1	A	163	GLU
1	A	194	LEU
1	A	218	GLU
1	A	231	ASP
1	A	240	SER
1	A	291	SER
1	A	301	LEU
1	A	328	ASN
1	A	333	ILE
1	A	334	LEU
1	A	363	ILE
1	A	366	VAL
1	A	368	GLU
1	A	369	LEU
1	A	380	LEU
1	A	382	LEU
1	A	391	SER
1	A	408	GLU
1	A	417	LEU
1	B	31	LYS

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Mol	Chain	Res	Type
1	B	33	MET
1	B	52	VAL
1	B	111	LEU
1	B	145	THR
1	B	163	GLU
1	B	194	LEU
1	B	218	GLU
1	B	231	ASP
1	B	291	SER
1	B	316	MET
1	B	319	VAL
1	B	324	ASP
1	B	333	ILE
1	B	334	LEU
1	B	363	ILE
1	B	366	VAL
1	B	373	LYS
1	B	391	SER
1	B	408	GLU
1	B	417	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	95	HIS
1	A	237	GLN
1	A	328	ASN
1	B	95	HIS
1	B	147	GLN
1	B	237	GLN
1	B	328	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

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	0X1	A	501	-	40,41,41	1.05	2 (5%)	52,60,60	1.37	5 (9%)
2	0X1	B	501	-	40,41,41	1.26	3 (7%)	52,60,60	1.33	7 (13%)

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	0X1	A	501	-	-	5/15/15/15	0/5/5/5
2	0X1	B	501	-	-	5/15/15/15	0/5/5/5

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	501	0X1	C25-N35	4.37	1.39	1.34
2	A	501	0X1	C25-N35	3.78	1.38	1.34
2	A	501	0X1	C10-C11	-2.72	1.38	1.40
2	B	501	0X1	C10-C11	-2.25	1.38	1.40
2	B	501	0X1	C13-C5	-2.05	1.49	1.51

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	501	0X1	C6-C14-C15	4.61	122.80	120.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	501	0X1	C6-C14-C15	3.59	122.24	120.27
2	B	501	0X1	C13-C5-C10	3.55	123.84	120.04
2	A	501	0X1	O36-C25-N20	3.29	130.41	126.14
2	A	501	0X1	N20-C12-N37	3.07	112.88	111.01
2	A	501	0X1	O36-C25-N35	-2.80	126.15	129.41
2	B	501	0X1	O21-P27-O26	-2.35	100.47	106.73
2	A	501	0X1	O26-C17-C7	-2.25	105.07	109.35
2	B	501	0X1	O23-P27-O21	2.05	115.48	107.64
2	B	501	0X1	N35-C25-N20	-2.03	102.53	103.53
2	B	501	0X1	C29-O28-C2	-2.00	114.12	118.80
2	B	501	0X1	O36-C25-N20	2.00	128.74	126.14

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	0X1	C17-O26-P27-O21
2	A	501	0X1	C17-O26-P27-O22
2	A	501	0X1	C17-O26-P27-O23
2	B	501	0X1	N19-C13-C5-C7
2	B	501	0X1	C17-O26-P27-O21
2	B	501	0X1	C17-O26-P27-O22
2	B	501	0X1	C17-O26-P27-O23
2	A	501	0X1	N19-C13-C5-C7
2	A	501	0X1	N19-C13-C5-C10
2	B	501	0X1	N19-C13-C5-C10

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	0X1	1	0
2	B	501	0X1	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 0X1 A 501	
Bond lengths	Bond angles
Torsions	Rings

Ligand 0X1 B 501	
Bond lengths	Bond angles
Torsions	Rings
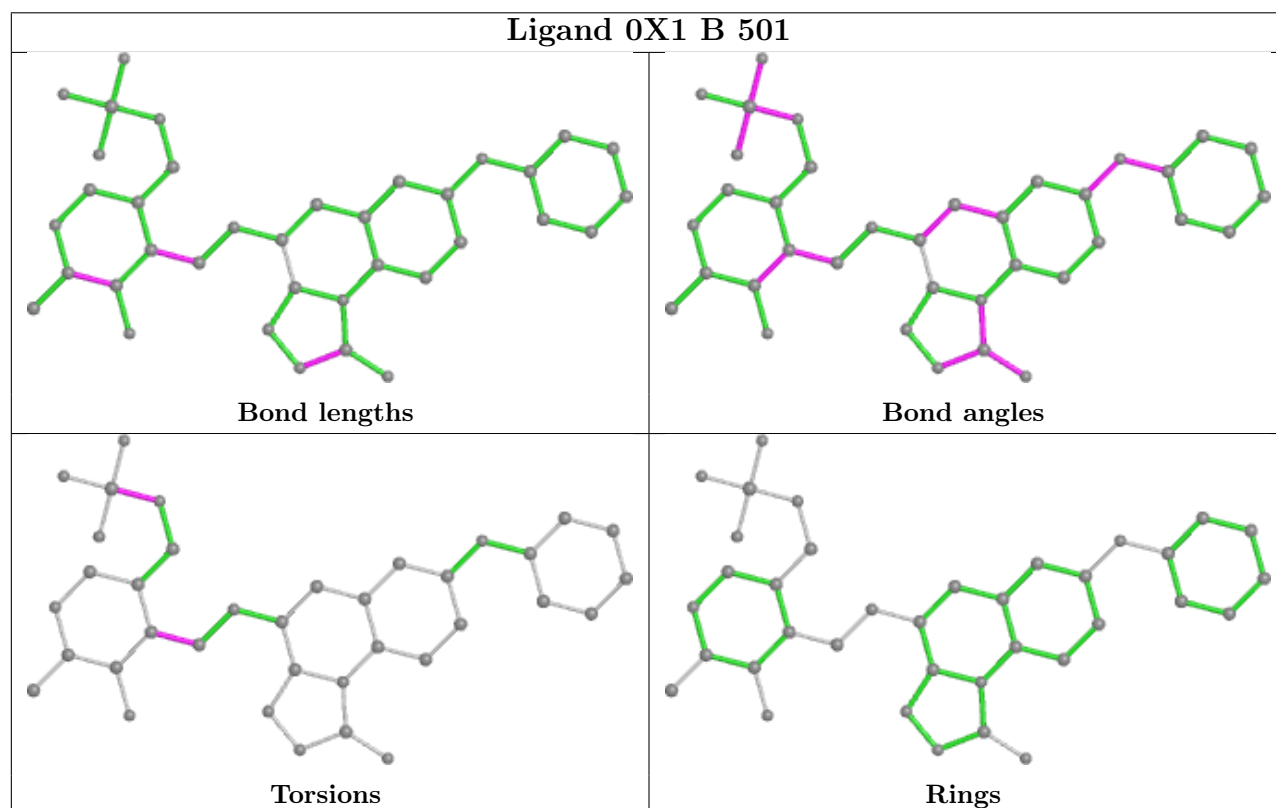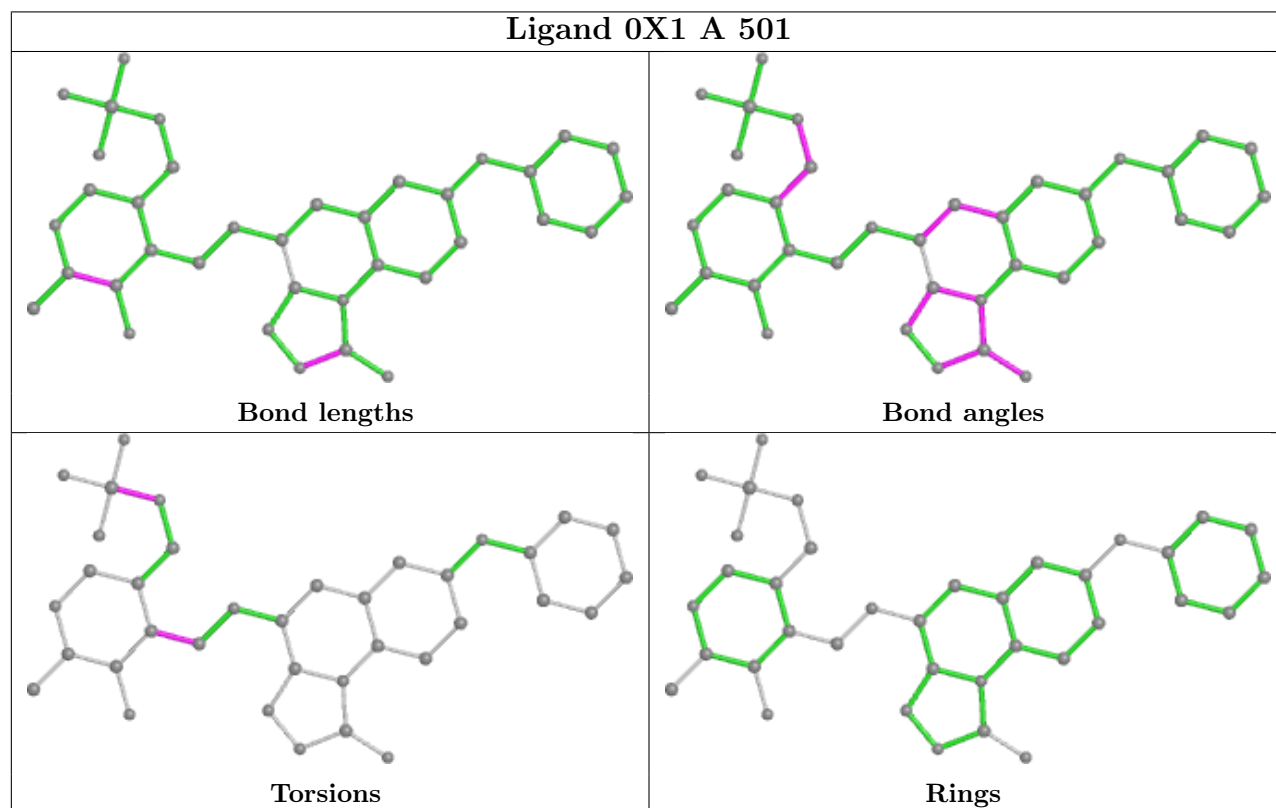
5.7 Other polymers ⓘ

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 (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	415/439 (94%)	-0.30	7 (1%)	70	69	26, 50, 92, 133	0
1	B	428/439 (97%)	-0.50	3 (0%)	87	87	20, 39, 70, 102	0
All	All	843/878 (96%)	-0.40	10 (1%)	79	79	20, 44, 82, 133	0

All (10) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	428	PRO	3.5
1	A	425	LEU	3.3
1	A	363	ILE	3.2
1	A	427	VAL	2.9
1	A	426	LEU	2.6
1	B	30	PRO	2.4
1	B	405	ALA	2.4
1	B	29	GLY	2.0
1	A	178	TRP	2.0
1	A	188	LYS	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.
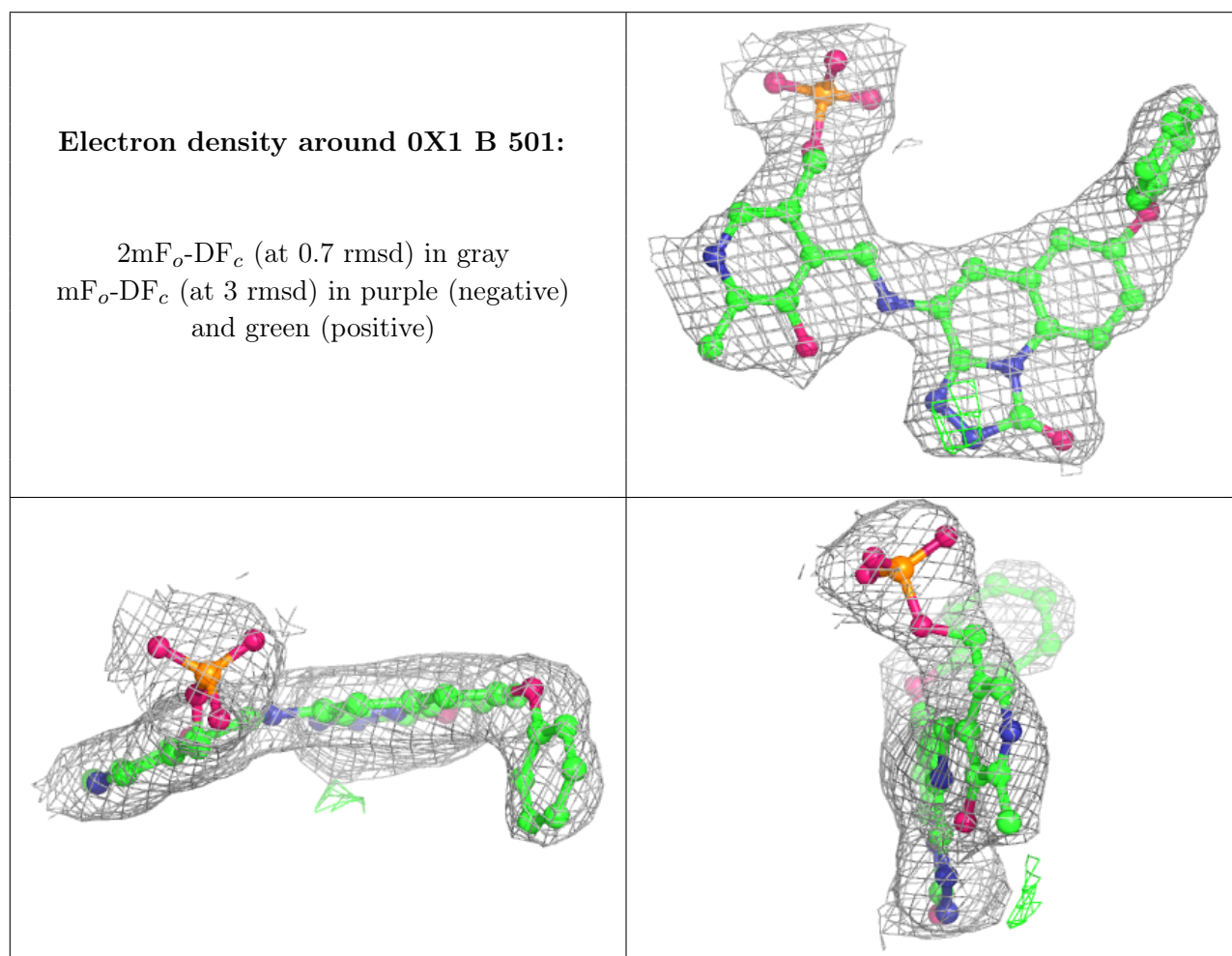
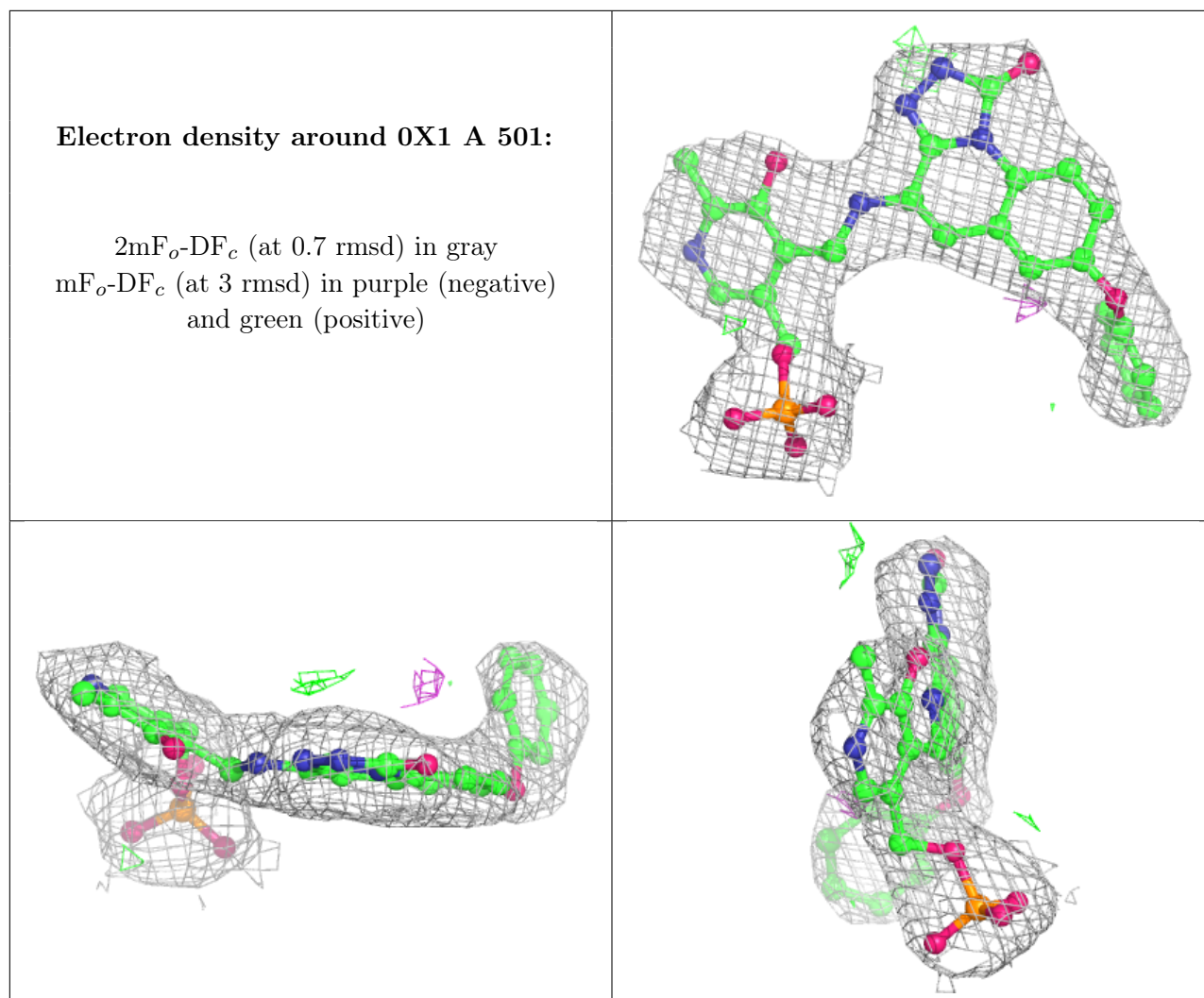## 6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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	0X1	B	501	37/37	0.96	0.14	30,41,48,49	0
2	0X1	A	501	37/37	0.97	0.15	33,36,45,48	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 0X1 B 501:

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

Electron density around 0X1 A 501:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.