



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 02:14 PM UTC

PDB ID : 5G4J / pdb_00005g4j
Title : Phospholyase A1RDF1 from Arthrobacter in complex with phospho-ethanolamine
Authors : Cuetos, A.; Tuan, A.N.; Mangas Sanchez, J.; Grogan, G.
Deposited on : 2016-05-13
Resolution : 1.87 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	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

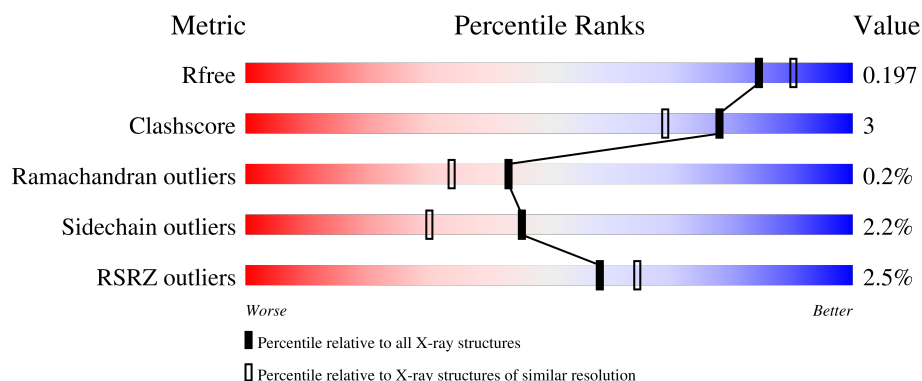
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.87 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}	180053	1220 (1.88-1.88)
Clashscore	190562	1234 (1.88-1.88)
Ramachandran outliers	187476	1222 (1.88-1.88)
Sidechain outliers	187428	1222 (1.88-1.88)
RSRZ outliers	180081	1220 (1.88-1.88)

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	446	2% 87% 7% • 5%
1	B	446	3% 87% 7% • 5%

2 Entry composition [i](#)

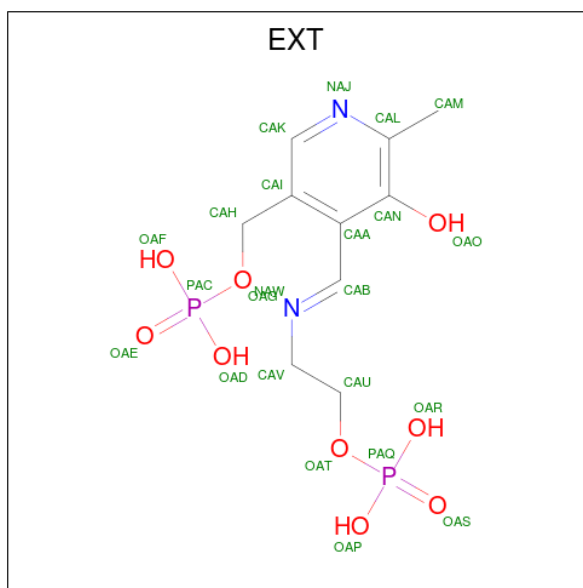
There are 4 unique types of molecules in this entry. The entry contains 6841 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 PUTATIVE AMINOTRANSFERASE CLASS III PROTEIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	423	Total	C	N	O	S	0	1	0
			3174	2021	552	592	9			
1	B	422	Total	C	N	O	S	0	1	0
			3142	2005	544	584	9			

- Molecule 2 is {5-hydroxy-6-methyl-4-[(E)-{2-(phosphonooxy)ethyl}imino}methyl]pyridin-3-yl}methyl dihydrogen phosphate (CCD ID: EXT) (formula: C₁₀H₁₆N₂O₉P₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			23	10	2	9	2		
2	B	1	Total	C	N	O	P	0	0
			23	10	2	9	2		

- Molecule 3 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total 2	Na 2	0	0
3	B	1	Total 1	Na 1	0	0

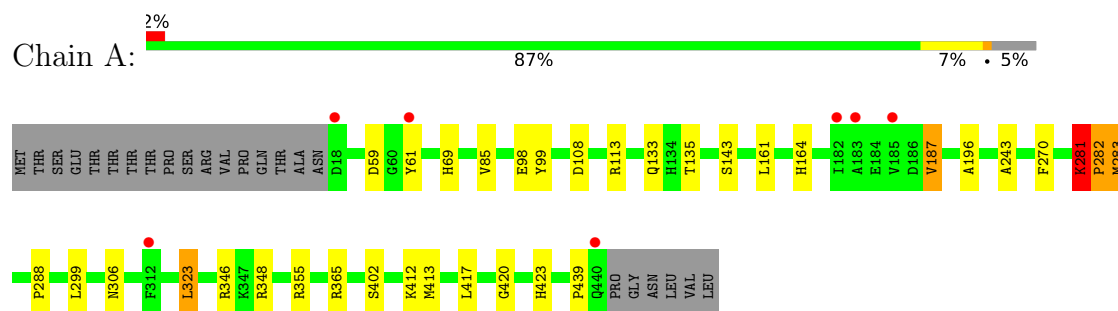
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	308	Total 308	O 308	0	0
4	B	168	Total 168	O 168	0	0

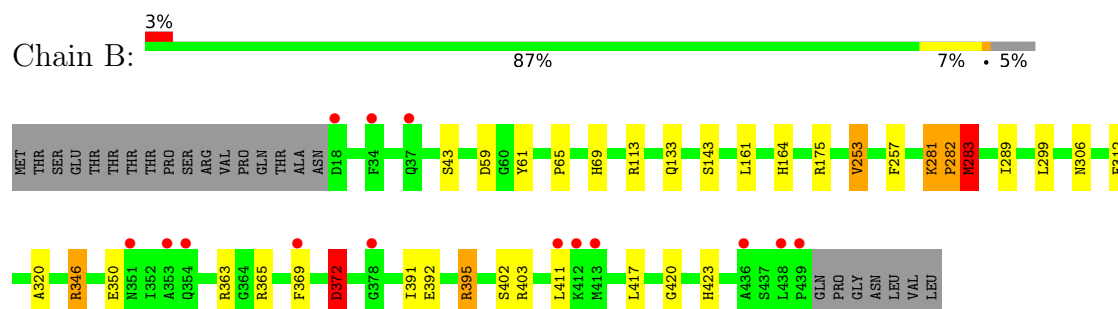
3 Residue-property plots

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: PUTATIVE AMINOTRANSFERASE CLASS III PROTEIN



• Molecule 1: PUTATIVE AMINOTRANSFERASE CLASS III PROTEIN



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	76.17Å 96.37Å 121.90Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	75.60 – 1.87 75.60 – 1.87	Depositor EDS
% Data completeness (in resolution range)	99.8 (75.60-1.87) 99.8 (75.60-1.87)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.59 (at 1.87Å)	Xtriage
Refinement program	REFMAC 5.8.0135	Depositor
R, R_{free}	0.167 , 0.199 (Not available) , 0.197	Depositor DCC
R_{free} test set	3637 reflections (4.87%)	wwPDB-VP
Wilson B-factor (Å ²)	22.7	Xtriage
Anisotropy	0.505	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 33.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	6841	wwPDB-VP
Average B, all atoms (Å ²)	26.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.31% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: EXT, NA

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	1.37	8/3242 (0.2%)	1.13	12/4404 (0.3%)
1	B	1.28	4/3209 (0.1%)	1.09	9/4362 (0.2%)
All	All	1.32	12/6451 (0.2%)	1.11	21/8766 (0.2%)

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	187	VAL	CA-CB	7.07	1.58	1.53
1	B	65	PRO	CA-C	6.29	1.58	1.52
1	B	289	ILE	C-O	6.05	1.30	1.23
1	A	365	ARG	CD-NE	-5.89	1.38	1.46
1	A	282	PRO	CA-CB	5.51	1.61	1.53
1	A	270	PHE	CA-C	-5.33	1.46	1.52
1	A	196	ALA	N-CA	5.31	1.52	1.46
1	A	243	ALA	N-CA	5.11	1.52	1.46
1	A	282	PRO	CA-C	-5.08	1.43	1.52
1	B	253	VAL	C-O	-5.07	1.18	1.24
1	A	135	THR	N-CA	-5.04	1.39	1.46
1	B	320	ALA	C-O	5.03	1.30	1.24

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	187	VAL	N-CA-CB	13.68	119.12	110.50
1	A	108	ASP	CB-CA-C	-8.01	96.17	111.48
1	A	365	ARG	NE-CZ-NH2	-6.96	112.93	119.20
1	B	372	ASP	N-CA-CB	6.58	120.00	110.06
1	A	348	ARG	CG-CD-NE	-6.52	97.66	112.00
1	B	283	MET	N-CA-C	6.18	118.81	111.33
1	B	346	ARG	CG-CD-NE	-6.06	98.67	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	365	ARG	N-CA-CB	-5.82	101.99	111.24
1	A	346	ARG	NE-CZ-NH1	5.63	127.13	121.50
1	A	346	ARG	NE-CZ-NH2	-5.53	114.23	119.20
1	B	282	PRO	CB-CA-C	-5.48	104.06	111.85
1	B	350	GLU	CA-CB-CG	-5.45	103.20	114.10
1	B	372	ASP	CB-CA-C	-5.28	100.61	109.53
1	B	395	ARG	NE-CZ-NH2	-5.25	114.48	119.20
1	A	283	MET	N-CA-C	5.22	117.71	111.71
1	A	348	ARG	NE-CZ-NH2	-5.18	114.54	119.20
1	A	439	PRO	N-CA-C	5.11	118.74	111.13
1	A	413	MET	CA-CB-CG	-5.10	103.91	114.10
1	A	281	LYS	N-CA-C	5.08	121.04	109.81
1	B	346	ARG	NE-CZ-NH2	-5.04	114.67	119.20
1	B	283	MET	CG-SD-CE	-5.01	89.89	100.90

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	3174	0	3126	16	0
1	B	3142	0	3075	23	0
2	A	23	0	12	0	0
2	B	23	0	12	0	0
3	A	2	0	0	0	0
3	B	1	0	0	0	0
4	A	308	0	0	2	0
4	B	168	0	0	5	0
All	All	6841	0	6225	35	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 (35) 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:420:GLY:H	1:A:423:HIS:HD2	1.34	0.72
1:B:281:LYS:HE3	4:B:2015:HOH:O	1.88	0.72
1:B:420:GLY:H	1:B:423:HIS:HD2	1.38	0.72
1:A:98:GLU:OE1	4:A:2088:HOH:O	2.13	0.66
1:B:363:ARG:NE	1:B:372:ASP:OD1	2.31	0.64
1:B:253:VAL:CG1	1:B:281:LYS:HD2	2.32	0.60
4:A:2068:HOH:O	1:B:69:HIS:HD2	1.83	0.60
1:B:164:HIS:HD2	4:B:2088:HOH:O	1.84	0.59
1:A:420:GLY:H	1:A:423:HIS:CD2	2.20	0.57
1:A:281:LYS:CB	1:A:282:PRO:CD	2.85	0.55
1:A:99:TYR:HB2	1:A:323:LEU:HD22	1.90	0.54
1:A:59:ASP:OD2	1:A:69:HIS:HE1	1.91	0.54
1:B:420:GLY:H	1:B:423:HIS:CD2	2.24	0.53
1:B:59:ASP:OD2	1:B:69:HIS:HE1	1.91	0.53
1:B:253:VAL:HG12	1:B:281:LYS:HD2	1.91	0.52
1:B:257:PHE:CZ	1:B:283:MET:HG3	2.45	0.52
1:A:113:ARG:HB3	1:A:299:LEU:HD13	1.93	0.51
1:B:365:ARG:NH2	4:B:2165:HOH:O	2.34	0.51
1:A:164:HIS:H	1:B:306:ASN:ND2	2.10	0.50
1:B:281:LYS:CB	1:B:282:PRO:CD	2.91	0.49
1:B:164:HIS:CD2	4:B:2088:HOH:O	2.63	0.48
1:B:113:ARG:HB3	1:B:299:LEU:HD13	1.94	0.48
1:A:69:HIS:HD2	4:B:2026:HOH:O	1.97	0.47
1:A:133:GLN:HE22	1:A:306:ASN:HD21	1.64	0.46
1:B:346:ARG:HB2	1:B:369[A]:PHE:CZ	2.51	0.46
1:B:133:GLN:HE22	1:B:306:ASN:HD21	1.64	0.44
1:A:306:ASN:ND2	1:B:164:HIS:H	2.16	0.44
1:A:281:LYS:HB2	1:A:282:PRO:HD2	1.99	0.44
1:B:391:ILE:HD11	1:B:403:ARG:HB3	2.00	0.43
1:A:85:VAL:HB	1:B:43:SER:HA	2.00	0.43
1:B:61:TYR:CE1	1:B:402:SER:HB3	2.53	0.43
1:A:288:PRO:HA	1:B:312:PHE:CD2	2.54	0.42
1:A:61:TYR:CE1	1:A:412:LYS:HE3	2.55	0.41
1:A:61:TYR:CE1	1:A:402:SER:HB3	2.56	0.40
1:B:392:GLU:OE1	1:B:395:ARG:NH1	2.54	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	422/446 (95%)	407 (96%)	14 (3%)	1 (0%)	43	34
1	B	421/446 (94%)	405 (96%)	15 (4%)	1 (0%)	43	34
All	All	843/892 (94%)	812 (96%)	29 (3%)	2 (0%)	43	34

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	281	LYS
1	B	281	LYS

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	327/361 (91%)	320 (98%)	7 (2%)	47	32
1	B	316/361 (88%)	309 (98%)	7 (2%)	45	30
All	All	643/722 (89%)	629 (98%)	14 (2%)	45	30

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	143	SER
1	A	161	LEU
1	A	187	VAL
1	A	283	MET

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Mol	Chain	Res	Type
1	A	323	LEU
1	A	355	ARG
1	A	417	LEU
1	B	143	SER
1	B	161	LEU
1	B	175	ARG
1	B	283	MET
1	B	372	ASP
1	B	411	LEU
1	B	417	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	37	GLN
1	A	69	HIS
1	A	80	GLN
1	A	86	ASN
1	A	210	HIS
1	A	287	HIS
1	A	306	ASN
1	A	423	HIS
1	B	69	HIS
1	B	80	GLN
1	B	86	ASN
1	B	164	HIS
1	B	287	HIS
1	B	306	ASN
1	B	423	HIS

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 [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 5 ligands modelled in this entry, 3 are monoatomic - leaving 2 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	$\# Z > 2$
2	EXT	A	1441	-	23,23,23	1.85	7 (30%)	30,33,33	1.52	5 (16%)
2	EXT	B	1440	-	23,23,23	2.19	10 (43%)	30,33,33	1.44	5 (16%)

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	EXT	A	1441	-	-	3/15/15/15	0/1/1/1
2	EXT	B	1440	-	-	0/15/15/15	0/1/1/1

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1440	EXT	CAM-CAL	-4.57	1.43	1.50
2	B	1440	EXT	CAK-NAJ	4.38	1.43	1.34
2	A	1441	EXT	CAM-CAL	-4.22	1.43	1.50
2	B	1440	EXT	PAQ-OAT	3.57	1.71	1.60
2	A	1441	EXT	PAQ-OAT	2.84	1.69	1.60
2	B	1440	EXT	PAQ-OAR	2.72	1.64	1.54
2	A	1441	EXT	CAH-CAI	-2.69	1.44	1.50
2	A	1441	EXT	PAC-OAE	-2.61	1.42	1.50
2	B	1440	EXT	PAC-OAE	2.60	1.58	1.50
2	A	1441	EXT	CAK-CAI	2.59	1.42	1.37
2	B	1440	EXT	PAC-OAG	2.49	1.68	1.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1441	EXT	PAC-OAG	-2.49	1.52	1.60
2	B	1440	EXT	CAH-CAI	-2.38	1.44	1.50
2	B	1440	EXT	CAA-CAB	-2.31	1.41	1.46
2	B	1440	EXT	PAQ-OAP	2.29	1.63	1.54
2	A	1441	EXT	CAL-NAJ	2.19	1.37	1.33
2	B	1440	EXT	PAC-OAD	-2.07	1.47	1.54

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1441	EXT	OAG-CAH-CAI	4.70	118.17	109.36
2	B	1440	EXT	CAA-CAN-CAL	3.68	122.21	120.14
2	A	1441	EXT	CAA-CAN-CAL	3.45	122.08	120.14
2	A	1441	EXT	OAD-PAC-OAE	2.81	121.79	110.83
2	B	1440	EXT	OAP-PAQ-OAT	2.64	113.55	106.67
2	B	1440	EXT	CAU-CAV-NAW	-2.35	107.30	111.11
2	B	1440	EXT	OAG-CAH-CAI	2.34	113.73	109.36
2	B	1440	EXT	OAG-PAC-OAE	-2.29	100.24	106.44
2	A	1441	EXT	CAN-CAA-CAI	-2.28	116.45	118.28
2	A	1441	EXT	OAT-PAQ-OAS	2.06	112.00	106.44

There are no chirality outliers.

All (3) torsion outliers are listed below:

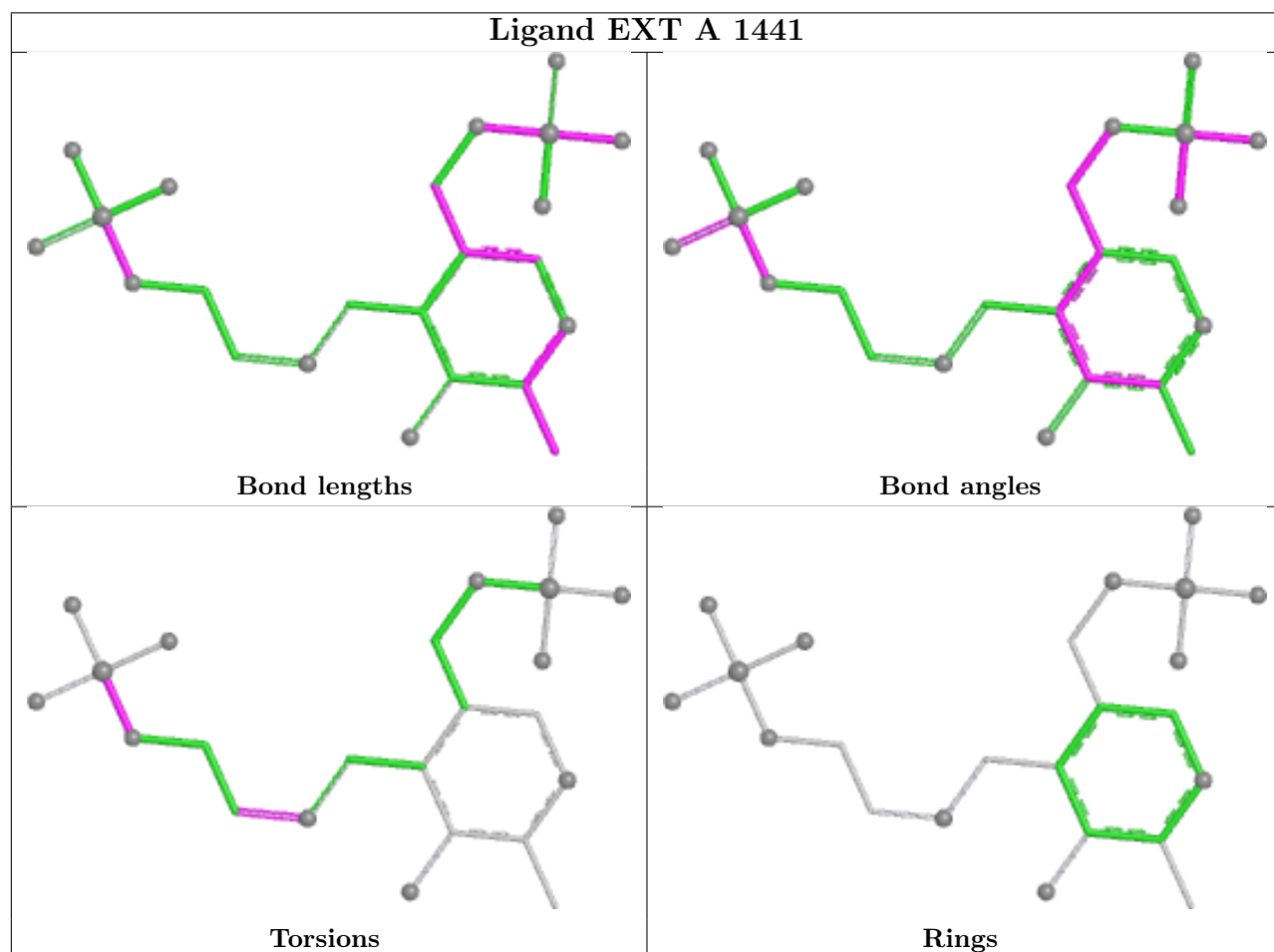
Mol	Chain	Res	Type	Atoms
2	A	1441	EXT	CAU-OAT-PAQ-OAS
2	A	1441	EXT	CAU-CAV-NAW-CAB
2	A	1441	EXT	CAU-OAT-PAQ-OAR

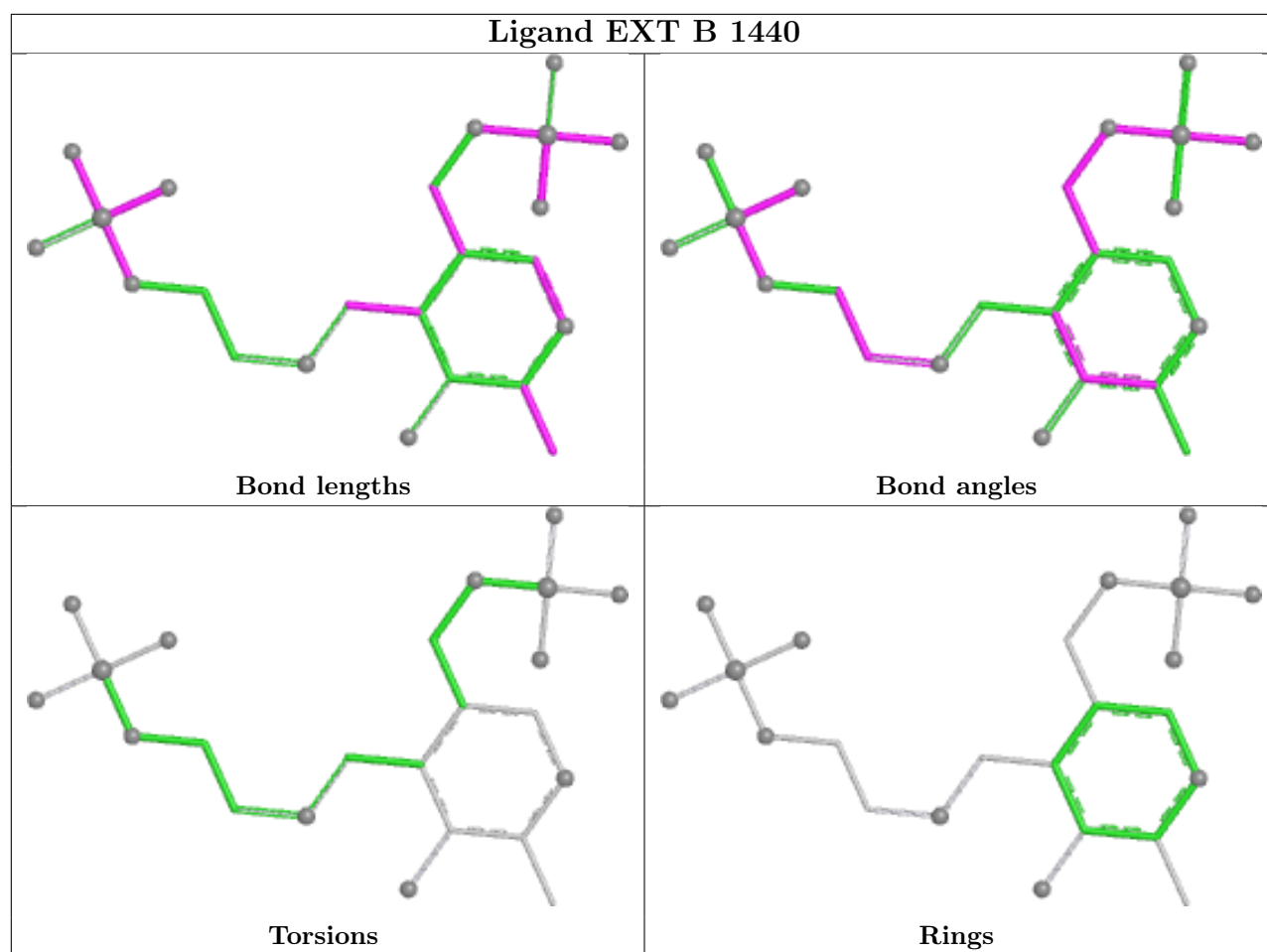
There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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 [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, 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	423/446 (94%)	-0.17	7 (1%) 69 74	9, 21, 36, 64	1 (0%)
1	B	422/446 (94%)	0.20	14 (3%) 49 54	15, 27, 48, 73	1 (0%)
All	All	845/892 (94%)	0.01	21 (2%) 58 64	9, 24, 45, 73	2 (0%)

All (21) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	439	PRO	4.5
1	A	440	GLN	4.4
1	A	182	ILE	3.9
1	B	18	ASP	3.4
1	B	411	LEU	3.0
1	B	436	ALA	2.9
1	B	378	GLY	2.9
1	B	369[A]	PHE	2.8
1	B	354	GLN	2.7
1	B	351	ASN	2.6
1	A	183	ALA	2.5
1	B	413	MET	2.5
1	A	61	TYR	2.3
1	A	18	ASP	2.2
1	A	185	VAL	2.2
1	A	312	PHE	2.1
1	B	438	LEU	2.1
1	B	353	ALA	2.1
1	B	34	PHE	2.1
1	B	412	LYS	2.0
1	B	37	GLN	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

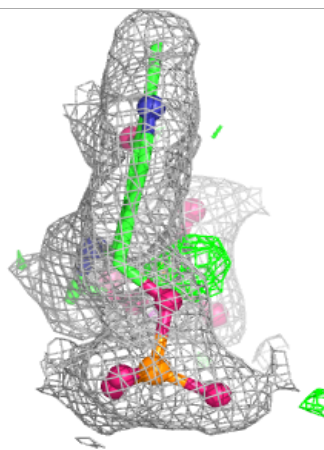
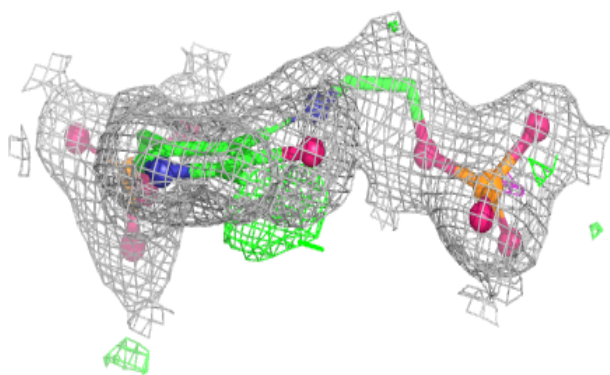
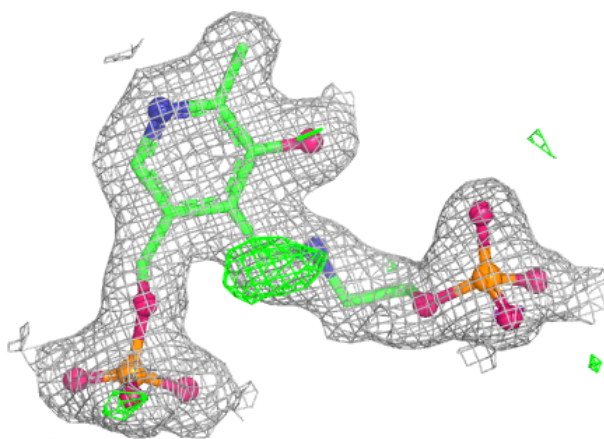
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

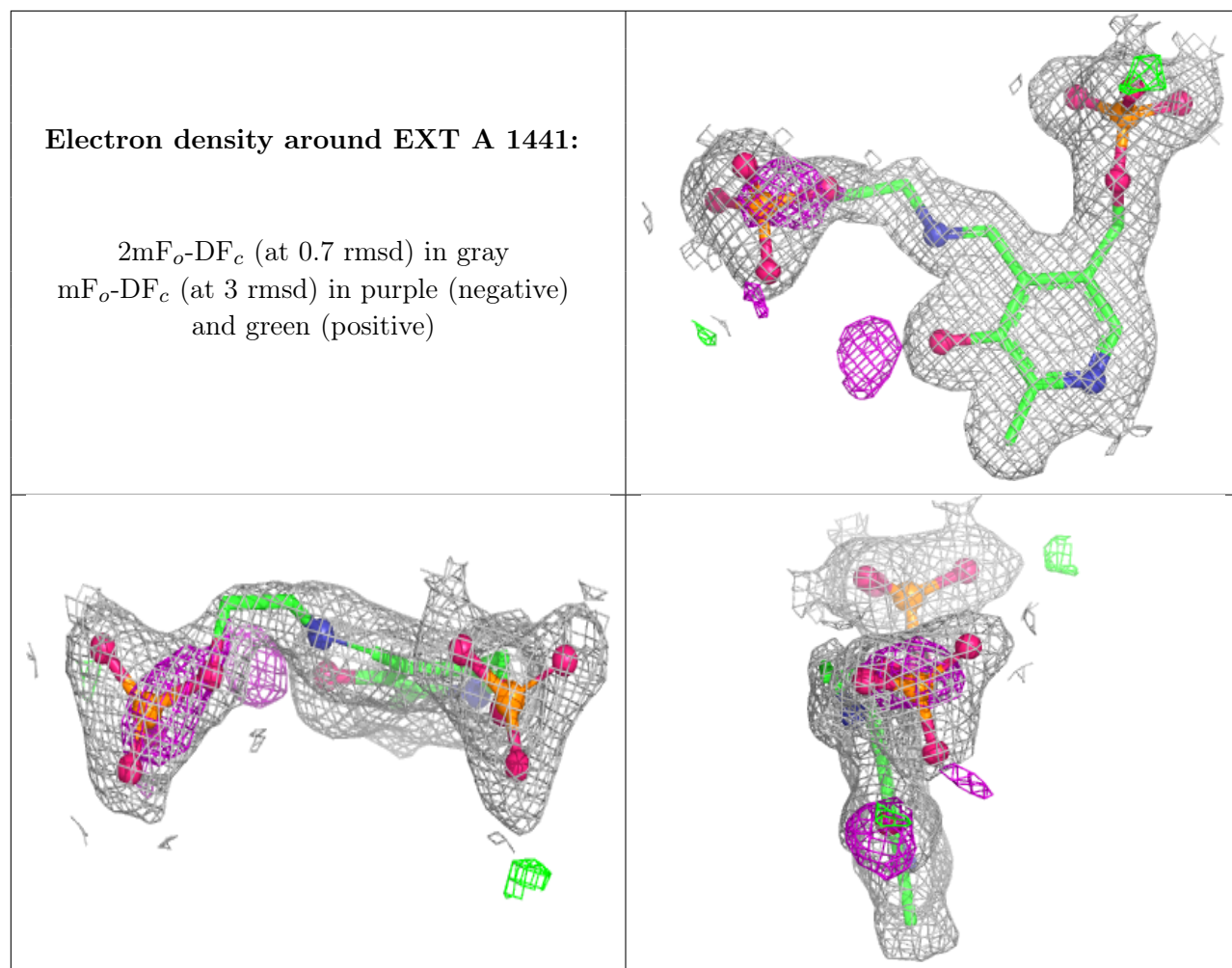
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	NA	A	1443	1/1	0.95	0.07	30,30,30,30	0
3	NA	B	1441	1/1	0.95	0.12	27,27,27,27	0
2	EXT	B	1440	23/23	0.96	0.07	18,24,44,48	0
2	EXT	A	1441	23/23	0.97	0.07	18,21,37,39	0
3	NA	A	1442	1/1	0.98	0.09	15,15,15,15	0

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 EXT B 1440:

$2mF_o-DF_c$ (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.