



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 8, 2026 – 12:45 PM UTC

PDB ID : 3D3O / pdb_00003d3o
Title : Crystal structure of the effector domain of the putative transcriptional regulator IclR from *Acinetobacter* sp. ADP1
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Deposited on : 2008-05-12
Resolution : 2.46 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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
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

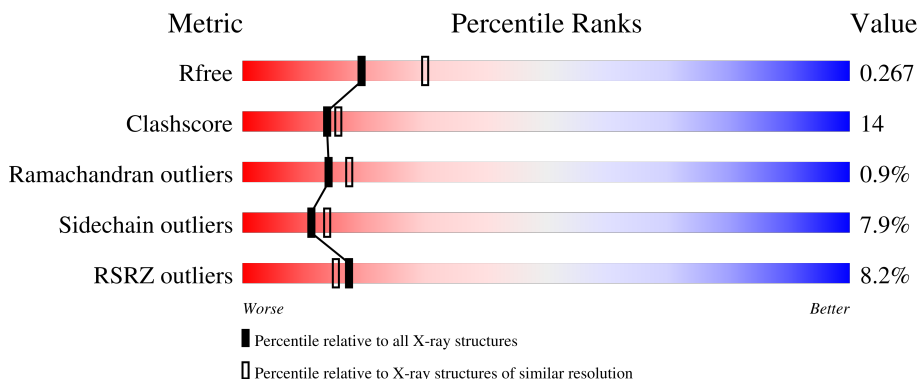
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.46 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	1190 (2.46-2.46)
Clashscore	190562	1229 (2.46-2.46)
Ramachandran outliers	187476	1218 (2.46-2.46)
Sidechain outliers	187428	1218 (2.46-2.46)
RSRZ outliers	180081	1190 (2.46-2.46)

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	178	4% 81% 16% ..
1	B	178	11% 58% 29% 8% ..

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 2986 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 transcriptional regulator, IcIR family.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	176	Total	C	N	O	S	Se	0	6	0
			1447	900	261	276	1	9			
1	B	172	Total	C	N	O	S	Se	0	6	0
			1409	876	252	270	1	10			

There are 6 discrepancies between the modelled and reference sequences:

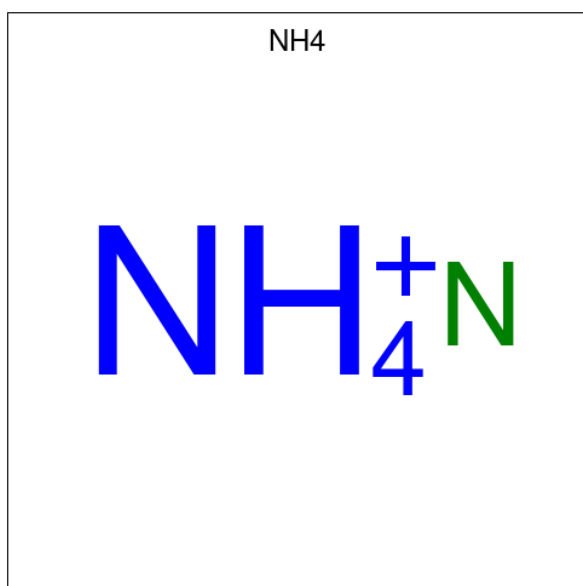
Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	SER	-	expression tag	UNP Q6FBA6
A	-1	ASN	-	expression tag	UNP Q6FBA6
A	0	ALA	-	expression tag	UNP Q6FBA6
B	-2	SER	-	expression tag	UNP Q6FBA6
B	-1	ASN	-	expression tag	UNP Q6FBA6
B	0	ALA	-	expression tag	UNP Q6FBA6

- Molecule 2 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total O S 5 4 1	0	0
2	A	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0

- Molecule 3 is AMMONIUM ION (CCD ID: NH4) (formula: H_4N).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total N 1 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	39	Total O 39 39	0	0
4	B	65	Total O 65 65	0	0

- Molecule 1: Putative transcriptional regulator, IcIR family



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	60.38Å 71.68Å 96.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	35.84 – 2.46 35.84 – 2.46	Depositor EDS
% Data completeness (in resolution range)	99.2 (35.84-2.46) 99.1 (35.84-2.46)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.52 (at 2.45Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.195 , 0.269 0.193 , 0.267	Depositor DCC
R_{free} test set	780 reflections (4.94%)	wwPDB-VP
Wilson B-factor (Å ²)	54.5	Xtriage
Anisotropy	0.165	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 60.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	2986	wwPDB-VP
Average B, all atoms (Å ²)	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.41% 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: SO4, NH4

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	0.93	1/1457 (0.1%)	1.08	5/1947 (0.3%)
1	B	1.12	4/1419 (0.3%)	1.15	9/1900 (0.5%)
All	All	1.03	5/2876 (0.2%)	1.12	14/3847 (0.4%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	89	GLY	C-N	12.41	1.49	1.33
1	B	80	ARG	CZ-NH1	-6.70	1.23	1.32
1	B	83	THR	C-O	5.29	1.30	1.24
1	A	44	LEU	N-CA	-5.11	1.40	1.46
1	B	41	VAL	CA-CB	5.03	1.60	1.54

The worst 5 of 14 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	74	ILE	N-CA-C	8.38	118.43	110.30
1	B	98	MSE	N-CA-C	6.14	117.77	111.14
1	B	0	ALA	N-CA-C	6.02	118.61	111.33
1	B	30	ILE	N-CA-C	-5.77	107.12	112.43
1	A	53	ILE	CA-C-N	-5.57	115.68	122.64

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1447	0	1444	21	0
1	B	1409	0	1406	62	0
2	A	10	0	0	1	0
2	B	15	0	0	0	0
3	B	1	0	0	0	0
4	A	39	0	0	3	0
4	B	65	0	0	20	0
All	All	2986	0	2850	83	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 14.

The worst 5 of 83 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:95:ASP:HA	4:B:243:HOH:O	1.46	1.14
1:B:98:MSE:HB2	4:B:243:HOH:O	1.62	0.96
1:B:69:MSE:HB3	4:B:231:HOH:O	1.73	0.89
1:B:106:GLU:HG2	4:B:224:HOH:O	1.78	0.83
1:B:66:MSE:HG2	1:B:69:MSE:HE2	1.61	0.81

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	180/178 (101%)	171 (95%)	8 (4%)	1 (1%)	21	27
1	B	176/178 (99%)	168 (96%)	6 (3%)	2 (1%)	11	12
All	All	356/356 (100%)	339 (95%)	14 (4%)	3 (1%)	14	20

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	94	VAL
1	A	166	LYS
1	B	29	ASP

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	159/146 (109%)	153 (96%)	6 (4%)	29	43
1	B	155/146 (106%)	135 (87%)	20 (13%)	4	3
All	All	314/292 (108%)	288 (92%)	26 (8%)	11	12

5 of 26 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	64	MSE
1	B	80	ARG
1	B	136	VAL
1	B	79	ARG
1	B	90	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	33	GLN
1	B	61	ASN
1	B	164	GLN
1	B	103	GLN
1	B	163	GLN

5.3.3 RNA ⓘ

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 6 ligands modelled in this entry, 1 is modelled with single atom - leaving 5 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	SO4	B	177	-	4,4,4	0.23	0	6,6,6	0.23	0
2	SO4	B	176	-	4,4,4	0.25	0	6,6,6	0.33	0
2	SO4	A	177	-	4,4,4	0.21	0	6,6,6	0.34	0
2	SO4	A	176	-	4,4,4	0.25	0	6,6,6	0.29	0
2	SO4	B	178	-	4,4,4	0.29	0	6,6,6	0.42	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	177	SO4	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	167/178 (93%)	0.65	7 (4%) 40 40	29, 62, 80, 85	9 (5%)
1	B	163/178 (91%)	1.03	20 (12%) 8 7	27, 58, 82, 87	10 (6%)
All	All	330/356 (92%)	0.84	27 (8%) 17 15	27, 60, 81, 87	19 (5%)

The worst 5 of 27 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	92	PHE	8.5
1	B	89	GLY	8.3
1	A	-2	SER	4.6
1	B	47[A]	HIS	4.3
1	B	91	ARG	4.2

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
2	SO4	B	176	5/5	0.77	0.13	108,109,109,109	0
2	SO4	A	176	5/5	0.78	0.26	104,104,105,106	0
2	SO4	B	178	5/5	0.78	0.21	115,115,117,117	0
2	SO4	A	177	5/5	0.83	0.17	96,97,98,98	0
2	SO4	B	177	5/5	0.85	0.18	130,131,131,131	0
3	NH4	B	179	1/1	0.93	0.09	46,46,46,46	0

6.5 Other polymers [i](#)

There are no such residues in this entry.