Full wwPDB X-ray Structure Validation Report ⓘ

Oct 3, 2023 – 12:28 AM EDT

PDB ID	:	6Q1H
Title	:	Structure of P. aeruginosa ATCC27853 NucC, cAAA-bound form
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Deposited on	:	2019-08-04
Resolution	:	1.45 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	:	FAILED
Xtriage (Phenix)	:	1.13
EDS	:	FAILED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.45 Å.

There are no overall percentile quality scores available for this entry.

MolProbity and EDS failed to run properly - the sequence quality summary graphics cannot be shown.

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 24734 atoms, of which 11172 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 Bacterial protein ORF C62.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	240	Total	C	H	N	O	S	0	4	0
			3723	1209	1837	316	357	4			
1	B	240	Total	C	H	N	O	S	0	5	0
			3759	1218	1857	319	361	4			
1	C	240	Total	C	H	N	O	S	0	7	0
			3757	1220	1856	318	359	4			
1	E	240	Total	C	H	N	O	S	0	2	0
			3744	1215	1852	317	356	4			
1	F	240	Total	C	H	N	O	S	0	8	0
			3782	1226	1871	320	361	4			
1	G	239	Total	C	H	N	O	S	0	4	0
			3713	1206	1833	315	355	4			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	73	ASN	ASP	engineered mutation	UNP Q8GQ48
B	73	ASN	ASP	engineered mutation	UNP Q8GQ48
C	73	ASN	ASP	engineered mutation	UNP Q8GQ48
E	73	ASN	ASP	engineered mutation	UNP Q8GQ48
F	73	ASN	ASP	engineered mutation	UNP Q8GQ48
G	73	ASN	ASP	engineered mutation	UNP Q8GQ48

- Molecule 2 is a RNA chain called RNA (5'-R(P*AP*AP*A)-3').

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	D	3	Total	C	H	N	O	P	0	0	0
			99	30	33	15	18	3			
2	H	3	Total	C	H	N	O	P	0	0	0
			99	30	33	15	18	3			

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	347	Total O 347 347	0	0
3	B	332	Total O 332 332	0	0
3	C	330	Total O 330 330	0	0
3	D	9	Total O 9 9	0	0
3	E	356	Total O 356 356	0	0
3	F	329	Total O 329 329	0	0
3	G	348	Total O 348 348	0	0
3	H	7	Total O 7 7	0	0

MolProbity and EDS failed to run properly - this section is therefore empty.

3 Data and refinement statistics (i)

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	80.50Å 80.45Å 262.08Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	76.95 – 1.45	Depositor
% Data completeness (in resolution range)	97.4 (76.95-1.45)	Depositor
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.02 (at 1.45Å)	Xtriage
Refinement program	PHENIX 1.15.2_3472	Depositor
R, R_{free}	0.147 , 0.167	Depositor
Wilson B-factor (Å^2)	16.8	Xtriage
Anisotropy	0.279	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.015 for k,h,-l	Xtriage
Total number of atoms	24734	wwPDB-VP
Average B, all atoms (Å^2)	21.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 27.79 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.0659e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[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.

4 Model quality

4.1 Standard geometry

MolProbity failed to run properly - this section is therefore empty.

4.2 Too-close contacts

MolProbity failed to run properly - this section is therefore empty.

4.3 Torsion angles

4.3.1 Protein backbone

MolProbity failed to run properly - this section is therefore empty.

4.3.2 Protein sidechains

MolProbity failed to run properly - this section is therefore empty.

4.3.3 RNA

MolProbity failed to run properly - this section is therefore empty.

4.4 Non-standard residues in protein, DNA, RNA chains

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

4.5 Carbohydrates

There are no monosaccharides in this entry.

4.6 Ligand geometry

There are no ligands in this entry.

4.7 Other polymers

There are no such residues in this entry.

4.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

5 Fit of model and data

5.1 Protein, DNA and RNA chains

EDS failed to run properly - this section is therefore empty.

5.2 Non-standard residues in protein, DNA, RNA chains

EDS failed to run properly - this section is therefore empty.

5.3 Carbohydrates

EDS failed to run properly - this section is therefore empty.

5.4 Ligands

EDS failed to run properly - this section is therefore empty.

5.5 Other polymers

EDS failed to run properly - this section is therefore empty.