



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 2, 2023 – 12:11 PM EDT

PDB ID : 6MPR
Title : Crystal structure of a malonate decarboxylase, alpha subunit from *Acinetobacter baumannii*
Authors : Seattle Structural Genomics Center for Infectious Disease (SSGCID)
Deposited on : 2018-10-08
Resolution : 1.70 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 : **FAILED**
Xtrriage (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

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.70 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

There are 2 unique types of molecules in this entry. The entry contains 9831 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 Malonate decarboxylase subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	548	Total	C	N	O	S	0	24	0
			4366	2789	751	804	22			
1	B	540	Total	C	N	O	S	0	16	0
			4242	2699	735	786	22			

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	MET	-	expression tag	UNP A0A1E3M5S3
A	-6	ALA	-	expression tag	UNP A0A1E3M5S3
A	-5	HIS	-	expression tag	UNP A0A1E3M5S3
A	-4	HIS	-	expression tag	UNP A0A1E3M5S3
A	-3	HIS	-	expression tag	UNP A0A1E3M5S3
A	-2	HIS	-	expression tag	UNP A0A1E3M5S3
A	-1	HIS	-	expression tag	UNP A0A1E3M5S3
A	0	HIS	-	expression tag	UNP A0A1E3M5S3
B	-7	MET	-	expression tag	UNP A0A1E3M5S3
B	-6	ALA	-	expression tag	UNP A0A1E3M5S3
B	-5	HIS	-	expression tag	UNP A0A1E3M5S3
B	-4	HIS	-	expression tag	UNP A0A1E3M5S3
B	-3	HIS	-	expression tag	UNP A0A1E3M5S3
B	-2	HIS	-	expression tag	UNP A0A1E3M5S3
B	-1	HIS	-	expression tag	UNP A0A1E3M5S3
B	0	HIS	-	expression tag	UNP A0A1E3M5S3

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	685	Total	O	0	6
			689	689		
2	B	531	Total	O	0	3
			534	534		

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

3 Data and refinement statistics

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

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	68.37Å 120.32Å 75.04Å 90.00° 112.77° 90.00°	Depositor
Resolution (Å)	45.40 – 1.70	Depositor
% Data completeness (in resolution range)	91.3 (45.40-1.70)	Depositor
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.71 (at 1.70Å)	Xtrriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.159 , 0.197	Depositor
Wilson B-factor (Å ²)	14.1	Xtrriage
Anisotropy	0.255	Xtrriage
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	9831	wwPDB-VP
Average B, all atoms (Å ²)	21.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.86% 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.

4 Model quality [i](#)

4.1 Standard geometry [i](#)

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4.2 Too-close contacts [i](#)

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4.3 Torsion angles [i](#)

4.3.1 Protein backbone [i](#)

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4.3.2 Protein sidechains [i](#)

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

4.3.3 RNA [i](#)

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

4.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

4.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

4.6 Ligand geometry [i](#)

There are no ligands in this entry.

4.7 Other polymers [i](#)

There are no such residues in this entry.

4.8 Polymer linkage issues

There are no chain breaks in this entry.

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

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

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

5.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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