Full wwPDB X-ray Structure Validation Report ⓘ

Oct 2, 2023 – 07:23 AM EDT

PDB ID	:	6MDY
Title	:	Crystal structure of a 2-dehydro-3-deoxyphosphooctonate aldolase from Legionella pneumophila Philadelphia 1
Authors	:	Seattle Structural Genomics Center for Infectious Disease (SSGCID)
Deposited on	:	2018-09-05
Resolution	:	2.55 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 2.55 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 2 unique types of molecules in this entry. The entry contains 7439 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 2-dehydro-3-deoxyphosphooctonate aldolase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	242	Total	C	N	O	S	0	1	0
			1814	1170	299	330	15			
1	B	242	Total	C	N	O	S	0	1	0
			1814	1167	297	335	15			
1	C	239	Total	C	N	O	S	0	0	0
			1742	1121	280	326	15			
1	D	255	Total	C	N	O	S	0	3	0
			1929	1238	319	357	15			

There are 32 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	MET	-	initiating methionine	UNP Q5ZWA3
A	-6	ALA	-	expression tag	UNP Q5ZWA3
A	-5	HIS	-	expression tag	UNP Q5ZWA3
A	-4	HIS	-	expression tag	UNP Q5ZWA3
A	-3	HIS	-	expression tag	UNP Q5ZWA3
A	-2	HIS	-	expression tag	UNP Q5ZWA3
A	-1	HIS	-	expression tag	UNP Q5ZWA3
A	0	HIS	-	expression tag	UNP Q5ZWA3
B	-7	MET	-	initiating methionine	UNP Q5ZWA3
B	-6	ALA	-	expression tag	UNP Q5ZWA3
B	-5	HIS	-	expression tag	UNP Q5ZWA3
B	-4	HIS	-	expression tag	UNP Q5ZWA3
B	-3	HIS	-	expression tag	UNP Q5ZWA3
B	-2	HIS	-	expression tag	UNP Q5ZWA3
B	-1	HIS	-	expression tag	UNP Q5ZWA3
B	0	HIS	-	expression tag	UNP Q5ZWA3
C	-7	MET	-	initiating methionine	UNP Q5ZWA3
C	-6	ALA	-	expression tag	UNP Q5ZWA3
C	-5	HIS	-	expression tag	UNP Q5ZWA3
C	-4	HIS	-	expression tag	UNP Q5ZWA3
C	-3	HIS	-	expression tag	UNP Q5ZWA3

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
C	-2	HIS	-	expression tag	UNP Q5ZWA3
C	-1	HIS	-	expression tag	UNP Q5ZWA3
C	0	HIS	-	expression tag	UNP Q5ZWA3
D	-7	MET	-	initiating methionine	UNP Q5ZWA3
D	-6	ALA	-	expression tag	UNP Q5ZWA3
D	-5	HIS	-	expression tag	UNP Q5ZWA3
D	-4	HIS	-	expression tag	UNP Q5ZWA3
D	-3	HIS	-	expression tag	UNP Q5ZWA3
D	-2	HIS	-	expression tag	UNP Q5ZWA3
D	-1	HIS	-	expression tag	UNP Q5ZWA3
D	0	HIS	-	expression tag	UNP Q5ZWA3

- Molecule 2 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	31	Total O 31 31	0	0
2	B	27	Total O 27 27	0	0
2	C	28	Total O 28 28	0	0
2	D	54	Total O 54 54	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	71.52Å 87.32Å 160.52Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	45.55 – 2.55	Depositor
% Data completeness (in resolution range)	99.9 (45.55-2.55)	Depositor
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.74 (at 2.54Å)	Xtriage
Refinement program	PHENIX (1.14_3219)	Depositor
R, R_{free}	0.176 , 0.227	Depositor
Wilson B-factor (Å^2)	40.4	Xtriage
Anisotropy	0.287	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	7439	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 8.78% of the height of the origin peak. No significant pseudotranslation is detected.*

[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.