



# Corrigendum: Purification and Characterisation of Malate Dehydrogenase From *Synechocystis* sp. PCC 6803: Biochemical Barrier of the Oxidative Tricarboxylic Acid Cycle

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## OPEN ACCESS

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## A Corrigendum on

### Purification and Characterisation of Malate Dehydrogenase From *Synechocystis* sp. PCC 6803: Biochemical Barrier of the Oxidative Tricarboxylic Acid Cycle

by Takeya, M., Ito, S., Sukigara, H., and Osanai, T. (2018). *Front. Plant Sci.* 9:947.  
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In the original article, there were errors in **Table 1** and **Table S1** as published as a result of the incorrect calculation of  $k_{cat}$ . We performed a re-calculation of and  $k_{cat}$  values and corrected the  $k_{cat}$  and  $k_{cat}/K_m$  values in **Table 1** and **Table S1**; the corrected versions these tables and updated **Table 1** footnote appear below.

The following sentence in the *Results* sub-section the *Measurement of Kinetic Parameters* contained an associated error: “SyMDH displayed approximately 1.7-fold ( $k_{cat}$ ) and 350-fold ( $k_{cat}/K_m$ ) preferences for oxaloacetate reduction over malate oxidation and approximately 4.7-fold ( $k_{cat}$ ) and 89.5-fold ( $k_{cat}/K_m$ ) preferences for NADH oxidation over NAD<sup>+</sup> reduction (**Table 1**).” This sentence should have read: “SyMDH displayed approximately 1.7-fold ( $k_{cat}$ ) and 361-fold ( $k_{cat}/K_m$ ) preferences for oxaloacetate reduction over malate oxidation and approximately 4.7-fold ( $k_{cat}$ ) and 90.5-fold ( $k_{cat}/K_m$ ) preferences for NADH oxidation over NAD<sup>+</sup> reduction (**Table 1**).”

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

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**TABLE 1** | Kinetic parameters of SyMDH.

	$V_{\max}$ (units·mg <sup>-1</sup> )	$k_{\text{cat}}$ (s <sup>-1</sup> )	$k_{\text{cat}}/K_m$ (s <sup>-1</sup> ·mM <sup>-1</sup> )
Malate	0.412	0.43	0.165
OAA	0.685	0.71	59.5
NAD <sup>+</sup>	0.199	0.21	0.357
NADH	0.931	0.97	32.3

The oxidative reaction (malate to oxaloacetate) was assayed in 100 mM potassium phosphate buffer (pH 8.0) by varying the malate concentration at a fixed NAD<sup>+</sup> concentration (8.0 mM) or by varying the NAD<sup>+</sup> concentration at a fixed malate concentration (4.0 mM). The reductive reaction (oxaloacetate to malate) was assayed in 100 mM potassium phosphate buffer (pH 6.5) by varying the oxaloacetate concentration at a fixed NADH concentration (0.1 mM) or by varying the NADH concentration at a fixed oxaloacetate concentration (0.1 mM). The kinetic parameters were calculated by the Lineweaver–Burk plot. The values of  $k_{\text{cat}}$  were calculated by dividing  $V_{\max}$  by the molar amounts of SyMDH proteins.

**TABLE S1** | Kinetic parameters of SyMDH calculated by Michaelis-Menten equation.

	$V_{\max}$ (units·mg <sup>-1</sup> )	$k_{\text{cat}}$ (s <sup>-1</sup> )	$k_{\text{cat}}/K_m$ (s <sup>-1</sup> ·mM <sup>-1</sup> )	$K_i$ (mM)
Malate	0.373	0.39	0.144	–
OAA	0.422	0.44	13.7	–
NAD <sup>+</sup>	0.647	0.67	0.674	14.5
NADH	1.795	1.87	134	–

The oxidative reaction (malate to oxaloacetate) was assayed in 100 mM potassium phosphate buffer (pH 8.0) by varying the malate concentration at a fixed NAD<sup>+</sup> concentration (8.0 mM) or by varying the NAD<sup>+</sup> concentration at a fixed malate concentration (4.0 mM). The reductive reaction (oxaloacetate to malate) was assayed in 100 mM potassium phosphate buffer (pH 6.5) by varying the oxaloacetate concentration at a fixed NADH concentration (0.1 mM) or by varying the NADH concentration at a fixed oxaloacetate concentration (0.1 mM). The kinetics parameters were calculated by the Michaelis-Menten equation.