Erratum

Erratum to “Electron transport chain in aerobically cultivated Zymomonas mobilis”


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On several occasions in the text, 'µM' was changed to 'mM'. In the Abstract, the 2nd and 3rd sentence should read:

Aerobically grown cells contained mainly the non-energy-generating NADH dehydrogenase with $K_M$ for NADH 58 µM. In anaerobically cultivated bacteria, the energy-coupling NADH dehydrogenase complex with $K_M$ for NADH 7 µM predominated.

Section 3.1. should have been printed as follows:

3.1. Kinetic parameters of NADH oxidase

The concentration dependence of NADH oxidase activity was examined in membrane preparations of aerobically and anaerobically cultivated cells. The results are presented in Eadie-Hofstee coordinates in Fig. 1. The plot for aerobically grown cells was biphasic, as was demonstrated for E. coli [7]. However, for anaerobically grown cells the Eadie-Hofstee plot was monophasic. The apparent $K_M$ of NADH oxidase for NADH in anaerobically grown cells was around 7 µM, typical for the energy-coupling NADH dehydrogenase complex I [7-9]. The same $K_M$ value was found for one of the components in aerobically grown cells. The apparent $K_M$ of the second component prevailing in aerobically grown cells was 58 µM. This enzyme probably corresponds to the NADH oxidase described by Kim et al. [3], who reported a single apparent $K_M$ value of 66 µM and attributed Z. mobilis NADH dehydrogenase to the energy non-generating type (type II). We speculate that Kim et al. might have lost some of the complex I activity during preparation of membranes (by double passage of cells through a French press [3]). In our preparations obtained by sonication the total NADH oxidase activity was significantly higher than reported by these authors.

Additionally, two mistakes were made in the legend to Fig. 1. The legend should read as follows:

Fig. 1. Kinetic analysis of NADH oxidase in membranes of anaerobically (■) and aerobically (□) cultivated cells. An Eadie-Hofstee plot is shown of activities measured over the range of 10–200 µM NADH with 0.03 mg of membrane protein/ml in the spectrometer cuvette. Parameters for anaerobic cells: $K_M = 7$ µM, $V_{max} = 1.2$ U/mg. Aerobic cells, high affinity component: $K_M = 7$ µM, $V_{max} = 1.1$ U/mg. Aerobic cells, low affinity component: $K_M = 58$ µM, $V_{max} = 2.1$ U/mg.

The Editor regrets these mistakes and apologizes to the authors.

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