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EFFECT OF METHYLENE BLUE ON ELECTRON MEDIATED MICROBIAL FUEL CELL BY *Saccharomyces cerevisiae*

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Abstract

Microbial fuel cells (MFCs) are bioelectrochemical reactors that directly convert the chemical energy stored in chemical bonds of organic substrates, to electrical energy. *Saccharomyces cerevisiae* was implemented as biocatalyst in the anaerobic anode compartment of an MFC using glucose as carbon source and methylene blue as electron mediator. Our results showed the effect of methylene blue on the microbial metabolism and the reversibility of the redox reaction of the shuttle mediator in the presence and the absence of a carbon source.

The implementation of this reaction in a yeast catalysed MFC suggested that the electron transfer from the cells to the anode was certainly limited by the mediator concentration in the solution.

However, a higher influence on the biopower generation of the MFC seemed to be linked to the yeast adsorption on the electrode surface than to the reduced methylene blue concentration in solution.

Key words: methylene blue, microbial fuel cell, *Saccharomyces cerevisiae*

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