Short Communication

Electrochemical Quantification of CK-MB in Serum Based on Immunoassay

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Creatine kinase isoenzyme (CK-MB) is a cardiac biomarker for post-PCI recovery evaluation. This work describes a novel biosensor concept that can be used to quantify enzyme levels where the substrate is immobilized directly on the glassy carbon electrode (GCE). The phosphorylated form of creatine (PC) was immobilized on the electrode with cysteamine (Cys) by a self-assembling monolayer technique. Electrochemical impedance spectroscopy (EIS) and cyclic voltammetry (CV) studies were used to follow the chemical modification process. The proposed electrochemical sensor could detect MB-CK at a range from 0.1 to 2000 ng/mL. The detection limit was determined to be 0.04 ng/mL.

Keywords: Creatine kinase-MB; Immunoassay; Serum; Electrochemical determination; Creatine kinase isoenzyme

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