

Fabrication of an Immunosensor for Cardiac Troponin I Determination

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Using the stripping voltammetry of platinum or palladium nanoparticles as the basis, this work proposes an emerging electrochemical technique to detect cardiac troponin I (cTnI). The amount of cTnI specifically adsorbed on an anti-cTnI-modified electrode surface was related to the PdNP (Pd) and PtNP (Pt) current responses. Plasma specimens from acute myocardial infarction (AMI) sufferers and healthy donors were used for cTnI surveillance. SPE/PdNP/anti-cTnI exhibits a wide detection range of 0.1–40 ng/ml, with a low detection limit (DL) of 0.1 ng/ml. SPE/PtNP/anti-cTnI exhibits a wide detection range of 0.1–55 ng/ml, with a low detection limit (DL) of 0.07 ng/ml.

Keywords: Cardiovascular diseases; Immunosensor; Cardiac troponin I; Platinum; Palladium

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