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Short Communication

Fabrication of an Electrochemical Immunosensor Containing Au–Ag Alloy for the Detection of Alpha Fetoprotein

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This study presented the enzyme-free determination of alpha fetoprotein (AFP) using a new electrochemical immunosensor. Our proposed immunosensor consisted of a sandwich system involving catalytic Au–Ag nanocrystals. The determination of AFP in the absence of an enzyme was achieved through the generation of signals by the remarkable Au–Ag alloy-induced catalysis of hydrogen peroxide reduction and the increase in sensitivity by enhanced charge transfer. Our developed immunosensor exhibited a linear range as broad as 0.05–30 ng/mL and a limit of detection (LOD) as low as 0.007 ng/mL. This immunosensor was found to be sensitive for clinical determination due to its simplicity and the involvement of catalytic Au–Ag nanoparticles.

Keywords: Electrochemical immunosensor; Enzyme-free; Au–Ag; Alpha fetoprotein; Clinic detection

FULL TEXT