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Preparation of Fe₃O₄@PS/PDA-Au nanotubes for Sensitive Electrochemical Detection of Alpha-Fetoprotein

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ABSTRACT

The electrochemical immunosensor was fabricated by immobilizing alpha-fetoprotein (AFP) antigen onto the magnetic glassy carbon electrode (MGCE) that modified by Fe₃O₄@polystyrene (PS) /polydopamine (PDA)-Au nanotubes. The aim of this study was to develop a new route to prepare Fe₃O₄@PS/PDA-Au nanotubes with well dispersed Au nanoparticles (AuNPs). The immune detection platform showed good analytical performance for determination AFP in a linear range of 0.01-100 ng/mL with a correlation coefficient of 0.9970 under optimal conditions.

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