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PII: S1572-6657(17)30957-8
DOI: https://doi.org/10.1016/j.jelechem.2017.12.076
Reference: JEAC 3781

To appear in: *Journal of Electroanalytical Chemistry*

Received date: 14 September 2017
Revised date: 23 December 2017
Accepted date: 31 December 2017

Please cite this article as: Fang Peng, Meilin Chu, Jiajia Sun, Yuhong Liu, Qicheng Zhang, Yajun Chen, Fenghe Wang, Wenbo Zhao , Preparation of Fe3O4@PS/PDA-Au nanotubes for sensitive electrochemical detection of alpha-fetoprotein. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Jeac(2017), https://doi.org/10.1016/j.jelechem.2017.12.076

Preparation of Fe_3O_4@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 Fe_3O_4@polystyrene (PS) /polydopamine (PDA)-Au nanotubes. The aim of this study was to develop a new route to prepare Fe_3O_4@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.