Short Communication

Nitrogen-doped Graphene Modified Glassy Carbon Electrode for Electrochemical Determination of Breast Cancer Marker Carbohydrate Antigen 15-3

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In this study, an electrochemical immunosensor based on nitrogen-doped graphene sheets (N-GS) for label-free and sensitive determination of CA15-3 was prepared. The linear range of this new immunosensor was as broad as 0.1–20 U/mL, and the limit of detection (LOD) was as low as 0.017 U/mL. Traditional immunosensors are similar to complex labelling systems, and the separation requires plenty of time. However, our proposed immunosensor is facile and requires no labelling. Our proposed immunosensor has potential uses in clinical analysis and diagnosis applications.

Keywords: Breast cancer; Biomarker; Electrochemical immunoassay; CA15-3; Graphene

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