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Short Communication

Development of Electrochemical Immunosensor for Detecting Salbutamol by Competitive Immune Strategy

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Salbutamol is a synthetic adrenergic receptor stimulant that is prohibited in competitive sports. In this work, an electrochemical sensor was fabricated using an immunoassay for the sensitive determination of the doping compound salbutamol. Polyamide amine-Au nanoparticle (PMA-Au) nanocomposites and horseradish oxidase-graphene antibodies (HRP-G-Abs) were used to amplify the signal. PMA-Au was used to immobilize the biomolecules in a stable manner, and graphene was used to increase the loaded amount of HRP. A competitive immune strategy was adopted for electrochemical sensor fabrication. The proposed immunosensor could linearly detect salbutamol from 0.1 ng/mL to 1 μ g/mL, with a low detection limit of 0.03 ng/mL. In addition, the proposed immunosensor was successfully used to detect salbutamol in real samples.

Keywords: Immunosensor; Electrochemistry; Doping; Salbutamol; Graphene

FULL TEXT

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