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基于巯基自组装单层膜的植物生长激素吲哚乙酸电化学免疫传感器的研究

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摘要 提出了一种酶标识抗原与待测样品的竞争免疫反应定量测定IAA的方法. 该方法是基于金基底上形成了均一、稳定、有序的硫基自组装单层膜，能以共价方式固定抗体. 利用循环伏安法探讨了底物在不同条件下的反应特征，并研究了最佳实验 条件. 在浓度5. 68×10^-7～2.83×10^-5mol/L范围内、-200mV电位下，响应电流 与lg[IAA]呈线性关系，其回归方程；i(nA)=-20.8333×lg(10^6[IAA])+68.9167， 相关系数0.9915。对样品IAA的含量进行测定，结果令人满意.

关键词 吲哚乙酸 循环伏安法 植物生长调节剂 传感器 电化学

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Amperometric Immunosensor Based on Mercapto Carboxylic Acid Self- assembled Monolayer for Phytohormone Indoleacetic Acid Assay

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Abstract A competitive binding assay used to detennine hapten IAA with the aid of HRP-IAA conjugate has been developed. It is based on the ordered, stable mercapto self-assembled monolayer formed on gold surface, which immobilized IgG with covalent bond. The features of the substrate reaction under different conditions were investigated by cyclic voltammetry and the assay conditions were optimized. Under applied potential of - 200 mV, the response current is linear with lg [IAA], over a concentration range of 5.68 X 10-7 ~ 2.83 X 10-5 mol/L with a correlation coefficient of 0.9915. The sensor was applied for the determination of IAA sample with satisfactory results.

Key words INDOLEACETIC ACID CYCLOVOLTAMGRAPH PLANT GROWTH REGULATORS SENSORS ELECTROCHEMISTRY

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