

## Development of An Electrochemical Impedance Immunosensor for Myoglobin Determination

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doi: 10.20964/2017.07.72

Received: 28 March 2017 / Accepted: 6 May 2017 / Published: 12 June 2017

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This work addressed the fabrication of a bioelectrode via the attachment of monolayer-protected Au nanoparticles (AuNPs) onto a 3-aminopropyltriethoxysilane (APTES) self-assembled monolayer (SAM) on an indium-tin-oxide (ITO). An anti-myoglobin antibody (Ab-Mb) was then linked to the AuNPs with a carbodiimide coupling reaction. The terminal bioelectrode was termed as Ab-Mb/AuNPs/APTES/ITO. Electrochemical impedance spectroscopy (EIS) and cyclic voltammetry (CV) were employed for the characterization of the proposed bioelectrode, which displayed an electrochemical impedance response to Ag-Mb in phosphate buffer solution (PBS) with a linear range of 10 ng/mL-1 µg/mL and an LOD of 2.7 ng/mL.

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**Keywords:** Myoglobin; Gold nanoparticles; Impedance immunosensor; Electrochemical impedance spectroscopy; Bioelectrode

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