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A New Amperometric Biosensor Based on Platinum(II) Complex with DNA for Detecting Autoantibodies to DNA

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Abstract

A biochemical biosensor was developed on the basis of a steady-state Hg-film electrode and either DNA molecules or antibodies to DNA immobilized in a cellulose nitrate film. This biosensor is designed to measure the concentration of DNA (or antibodies to DNA), and it can be used in the diagnosis of autoimmune diseases. Electric current of catalytic H₂ evolution caused by complexing between DNA (antibodies to DNA) and Pt(II) was used as an analytical signal. The detection sensitivity threshold for DNA and antibodies to DNA was 10 and 0.075 µg/ml, respectively.
