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Specific Determination of Hydrogen Peroxide With A Catalase Biosensor Based on Mercury Thin Film Electrodes

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Abstract: A biosensor for specific determination of hydrogen peroxide was developed using catalase (EC 1.11.1.6) in combination with a mercury film electrode. Catalase was immobilized with gelatine by means of glutaraldehyde on the electrode surface. The biosensor response was monitored by following the reduction peak of dissolved oxygen at around -0.24 V. The peak current changes upon addition of hydrogen peroxide and gives a linear response in a concentration range of $1-50 \times 10^{-6}$ M within a response time of 3 minutes.

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