

Electrocatalytic response of electrodes modified with metal phthalocyanines in the cholinesterase-thiocholine ester system

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Abstract

Hydrolysis products in the cholinesterase-thiocholine ester system were determined by voltammetry using electrodes modified with metal phthalocyanines (MPc, M = Fe, Co). Specific features of the electrooxidation of the hydrolysis product (thiocholine) at a carbon-paste electrode and at a chemically modified electrode (CME) were compared. The conditions for the detection of an electrocatalytic signal in the oxidation of thiocholine at the CME were studied. Performance characteristics of the electrocatalytic determination of thiocholine at the CME were determined. The use of electrodes chemically modified with MPc reduces the detection limit for cholinesterase substrates under consideration to $\sim n \times 10^{-6}$ M.

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