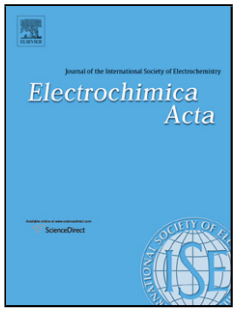

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Electrochemical oxidation of catecholamines on fluorine-doped SnO_2 substrates. Square-wave voltammetric method for methyldopa determination in pharmaceutical dosage forms

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Highlights

- The electrochemical oxidation of catecholamines was studied for the first time on FTO electrodes.
- Electrochemical parameters such as diffusion coefficient, charge transfer coefficient and heterogeneous charge transfer rate constant were calculated.
- Square wave voltammetry was used to determine methyldopa in pharmaceutical dosage forms.
- The method possesses good sensitivity and stability, and can be employed in clinical analysis, quality control and routine determination of drugs in pharmaceutical formulations.

Abstract

An electrochemical study of methyldopa (MD), dopamine (DA) and adrenaline (AD) catecholamines was conducted using cyclic (CV) and square wave voltammetry (SWV). The pH-dependant electrochemical behavior of catecholamines was studied for the first time on fluorine doped tin oxide electrodes (FTO). The CV scan rate study showed the charge transfer process was diffusion controlled. Besides, electrochemical parameters such as diffusion coefficient, charge transfer coefficient and heterogeneous charge transfer rate

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