

## عنوان مقاله:

Rapid and Sensitive Quantification of Isoproterenol in the Presence of Theophylline by CuO Nanoflowers Modified Electrochemical Sensor

## محل انتشار:

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## خلاصه مقاله:

Isoproterenol is an important catecholamine-based drug that is widely used in the treatment of heart disease. The present paper introduced one of the new modifications for the surfaces of glassy carbon electrodes (GCEs) using the CuO nanoflowers (CuO NFs) for determination of isoproterenol. Electrochemical properties of the CuO NFs/GCE for detecting isoproterenol were tested using the cyclic voltammetry (CV), chronoamperometry (CHA) as well as differential pulse voltammetry (DPV). Electrochemical studies demonstrated an efficient isoproterenol oxidation, with enhanced peak current from  $2.9 \mu\text{A}$  to about  $10.0 \mu\text{A}$  (۳.۴% increase) and decreased peak potential from  $500 \text{ mV}$  to about  $300 \text{ mV}$ . The linear response for the determination of isoproterenol was obtained in ranges for concentrations between  $0.3$  and  $450.0 \mu\text{M}$  under the most proper conditions and the limit of detection (LOD) equaled  $0.09 \mu\text{M}$ . Also, the modified electrode is utilized for simultaneously determining isoproterenol and theophylline using DPV. The proposed CuO NFs/GCE sensor was effectively employed for the isoproterenol and theophylline detection in the isoproterenol ampoule and urine samples.

## کلمات کلیدی:

glassy carbon electrode, CuO nanoflowers, Isoproterenol, Theophylline

## لینک ثابت مقاله در پایگاه سیویلیکا:

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