

عنوان مقاله:

.Electrocatalytic Determination of Captopril on Gold Nanoparticle-Modified Carbon Paste Electrode

محل انتشار:

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خلاصه مقاله:

The electrochemical behavior of captopril at the surface of a carbon-paste electrode (CPE) modified with gold nanoparticles (GNPs) is described. The prepared electrode shows an excellent electrocatalytic activity toward the oxidation of captopril, which is leading to marked considerable improvement of sensitivity. Whereas at the surface of unmodified electrode an electrochemical activity for captopril cannot be observed, a very sharp anodic wave with an anodic peak potential about ۱.۰V (versus Ag/AgCl) is obtained using the prepared modified electrode. Captopril oxidation on CPE/GNPs proceeds at pH between ۴.۰ and ۱۰.۰. Under the optimized conditions, the electrocatalytic oxidation peak current of captopril showed two linear dynamic ranges with a detection limit of $۸.۲۸ \times ۱۰^{-۲} \mu\text{M}$ captopril. The linear calibration range was ۱.۱۴-۱۶.۹۸ and ۲۱.۴۹-۶۲.۱ μM using amperometric. Finally, the sensor was examined as a selective, simple, and precise new electrochemical sensor for the determination of captopril in pharmaceutical samples including tablets and satisfactory results were obtained.

کلمات کلیدی:

Electrochemical, Determination, Captopril, Gold Nanoparticle

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