Selective Recognition of Ciprofloxacin Hydrochloride Based on Molecular Imprinted Sensor via Electrochemical Copolymerization of Pyrrole and *o*-phenylenediamine

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A simple and reliable method was proposed for rapid detecting ciprofloxacin, based on molecularly imprinted technology. The molecularly imprinted ciprofloxacin hydrochloride (CPX) sensor was prepared by electropolymerization of pyrrole (Py) and *o*-phenylenediamine (*o*-PD) on the pencil graphite electrode (PGE). The performance of the sensor was characterized by square wave voltammetry (SWV) using potassium ferricyanide as molecular probe. Under optimal conditions, the sensor displayed high selectivity and stability towards CPX. A linear relationship between the change in current (Δi) and the logarithm of CPX concentrations from 1×10^{-9} to 1×10^{-3} mol/L was obtained with a detection limit of 7.58×10^{-11} mol/L ($S/N=3$). Furthermore, the MIP sensor was applied for the analysis of real tablet samples with high accuracies.

Keywords: molecular imprint; copolymerization; cyclic voltammetry (CV); ciprofloxacin; sensor

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