



Square wave voltammetry sensing of ibuprofen on glassy carbon electrode

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Abstract : A glassy carbon was shown to enable the determination of ibuprofen using square wave voltammetry in aqueous alcoholic buffer of p H 1.0. The effect of pH was studied at different medium such as pH 1.0 to pH 13.0. The voltammetric detection of ibuprofen was carried out from -0.5 V to 1.8 V *versus* Ag/AgCl using glassy carbon electrode (GCE) as transducers. The oxidation peak around 1.6 V obtained for ibuprofen while employing electrode showed maximum current response. This peak was chosen for stripping analysis on GCE. The electroanalytical parameters of the biosensors are highly dependent on their configuration and on the dimensions of the carbon electrode. The best limit of detection obtained for ibuprofen was 200 ppb and the linear range from 300 to 800 ppb on GCE configuration. The ibuprofen was after adsorbed on electrode surface was characterized by atomic force microscopy. The adsorbed compound shows fine fiber like structure and good roughness values. The biosensors were successfully applied for the detection of ibuprofen in several drug formulations.

Keywords: ibuprofen, Cyclic Voltammetry, Glassy Carbon Electrodes, AFM and Square Wave Voltammetry.

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