

Determination of Ethambutol at Glassy Carbon Electrode Modified With Multiwall Carbon Nanotubes

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A simple and convenient electrochemical method for direct determination of ethambutol (EMB) using a glassy carbon electrode (GCE) modified with a film of multiwall carbon nanotubes (MWCNT) has been described. Electrochemical behavior of EMB has been investigated. Owing to the unique structure and extraordinary properties of MWCNT, the MWCNT film has shown an obvious electrocatalytic activity towards oxidation of EMB, since MWCNT greatly enhances the oxidation peak current of EMB and lowers its oxidation overpotential. All experimental parameters have been optimized. Under the optimum conditions the oxidation peak current was linearly proportional to the concentration of EMB in the range 8.0×10^{-6} to 2.5×10^{-4} mol L⁻¹. The detection limit was 7.6×10^{-7} mol L⁻¹ at 4 min accumulation, and the relative standard deviation (RSD) of eight determinations of 5×10^{-5} mol L⁻¹ EMB was 4.1%. The proposed method has been successfully applied to the determination of EMB in drugs.