

Title Determination of oxalic acid in spinach with carbon nanotubes-modified electrode
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Abstract

This work investigated the electrocatalytic oxidation of oxalic acid on multiwall carbon nanotubes (MWNTs) modified glassy carbon (GC) electrode. The result indicated that the oxidation of oxalic acid was greatly improved at the MWNTs-modified GC (MWNTs/GC) electrode as compared with the bare GC electrode. The effects of the MWNTs suspension amount, pH and scan rate on the electrooxidation response of oxalic acid were studied by voltammetry. The surface concentration and diffusion coefficient (D_R) of oxalic acid at the MWNTs/GC electrode were determined by chronocoulometry. This MWNTs/GC electrode presented a wide linear response ranging from 5.0×10^{-5} to 1.5×10^{-2} M for oxalic acid. The detection limit (S/N = 3) was estimated to be 1.2×10^{-5} M. Based on this MWNTs/GC electrode, the content of oxalic acid in spinach was successfully determined.