Electro-oxidation of carbamazepine metabolites: Characterization and influence in the voltammetric determination of the parent drug

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Abstract

The aim of this study was to investigate the electro-oxidation behavior of carbamazepine (CBZ) and its parental metabolites. The voltammetric determination of the parent drug in biological fluids was investigated for the first time. The investigation involved the use of cyclic voltammetry in combination with controlled potential electrolysis (CPE) and high-performance liquid chromatography (HPLC) analysis. The voltammetric properties of the compounds, using a bare glassy carbon electrode modified with multiwall carbon nanotubes, were studied. The electro-oxidation of CBZ and its metabolites was observed, and the voltammetric properties were determined. The analytical performance of the proposed voltammetric procedure, as well as the correlation of its results with the results obtained from HPLC-MS, were very good.