



Sensitive Voltammetric Determination of Salbutamol at Nafion and *f*-MWCNT Modified Disposable Pencil Graphite Electrode

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Salbutamol (SLBT) is a phenylethanolamine with potent pharmacological activity used to treat chronic obstructive pulmonary disease as well as allergic or exercise-induced asthma¹. Therefore, many analytical methods have been developed to detect SLBT and other β -agonist residues in both drugs and animal tissues. Today, electroanalytical techniques are of great interest to researchers due to several advantages such as low detection limit, high analyte selectivity, compact structure, simple sample preparation procedure, low cost, adaptability to field use, and minimal use of toxic organic solvents². In this context, the successful electrochemical determination of SLBT has been reported by the use of nanomaterial, or composite material-modified carbon-based electrodes such as GCE³, CPE⁴, and surface-printed carbon electrodes (SPCE)⁵. In this study, a nafion and acid-functionalized multi-walled nano-carbon modified pencil graphite electrode (Nf@*f*-MWCNT@PGE) was used for the first time for the electrochemical determination of SBLT. From the differential pulse voltammograms recorded under the optimized conditions, the linear range were found to be between 0.10 and 10 μ M with a detection limit of 0.04 μ M. The proposed disposable electrode has been successfully used to determine SBLT in commercial pharmaceuticals and human serum samples with good accuracy and satisfactory recoveries.

Keywords: Salbutamol; Pencil Graphite Electrode; Modified Electrode; Voltammetry.

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