Electrochemical Behavior and Sensitive Detection of Luteolin by Graphene-SnO₂ Nanocomposite Modified Electrode

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This study utilized a sensitive voltammetric way for detection of luteolin with graphene (GR) and tin oxide (SnO₂) nanocomposite modified electrode. A couple of well-distinctive redox peaks of luteolin could be observed on cyclic voltammogram, which was ascribed to large specific surface area and high conductivity of GR-SnO₂ nanocomposite. Then a new voltammetric sensing method for the analysis of luteolin was established in this experiment. Under the optimized conditions with differential pulse voltammetry, the anodic peak responses enhanced linearly with luteolin concentration from 6.0×10^{-8} mol/L to 6×10^{-5} mol/L with the detection limit of 9.8 nmol/L (3σ). The analytical application of this sensor was successfully proved by the Duiyiwei capsules sample detection.

Keywords: Graphene-SnO₂ nanocomposite, Luteolin, Differential pulse voltammetry, Electroanalysis

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