Electrochemical Determination of Ganopsoreric Acid A in Ganoderma

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A simple and effective electrochemical sensor with an electrode modified with an RGO/Au (reduced graphene oxide-gold nanoparticles) nanocomposite was developed for the determination of ganopsoreric acid A, an effective anti-ovarian tumor component. A microwave-assisted approach was adopted to prepare RGO, and RGO/Au was obtained by electrodepositing Au nanoparticles on RGO. Subsequently, the analysis of the electrochemical performance of the developed sensor regarding the reduction of ganopsoreric acid A was accomplished through electrochemical impedance spectroscopy (EIS) and cyclic voltammetry (CV). The electrochemical activity of ganopsoreric acid A reduction was significantly enhanced using the RGO/Au nanocomposite-modified electrode. On this sensor, the linear reaction range was found to be 2 μM to 600 μM . Moreover, the application range of the developed sensor was very wide and was applied for the detection of ganopsoreric acid A in ganoderma herb. The proposed electrochemical determination method could be used for the application of clinical anti-ovarian tumor drug detection.

Keywords: Electrochemistry; Ovarian tumor; Ganoderma; Nanocomposite; Ganopsoreric acid A

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