Preparation of Graphene-Copper Nanocomposite for Constructing Electrochemical Sensor for Paclitaxel Anti-Cancer Drug Detection in *Taxus Chinensis*

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In this work, a glassy carbon electrode modified with graphene and Au nanoparticles (GCE-graphene-EAu) was employed to electrochemically study paclitaxel which belonged to anticancer drug. Graphene and Au NPs were successfully electrodeposited on the surface of glassy carbon electrode in order to enhance the conductivity of electrode. An irreversible oxidation process was observed in the pH range of 3 to 10, which was diffusion-controlled. A linear relationship was observed between the anodic peak current and the concentration of paclitaxel ranging from 0.01 to 2 mM, where the limits of detection (LOD) and quantification (LOQ) were 0.005 and 0.004 mM, respectively. The designed approach was demonstrated to be efficient in the determination of paclitaxel in Chinese herb *Taxus chinensis*.

Keywords: *Taxus chinensis*; Paclitaxel; Sensor; Au nanoparticles; Graphene

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