A Novel Screen-Printed Electrode Modified by graphene Nanocomposite for Detecting Clozapine

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Present study aims to use Go/Fe₃O₄/SiO₂ nanocomposite modified screen printed electrode for electrochemical determination of clozapine. To that end, scanning electron microscopy (SEM) technique was used to study the surface morphology of the Go/Fe₃O₄/SiO₂ nanocomposite. The findings of the study showed that modified electrode has an excellent electrocatalytic performance toward oxidation of clozapine. A linear increase in differential pulse voltammetric peaks current of clozapine was observed with their concentrations in the range of 0.1-700.0 µM. The detection limit

obtained for clozapine was 0.03 μM . Some advantages of using proposed sensor, among the others, were fast response time, high sensitivity, signal stability, low cost, ease of preparation and the lack of need for using any specific electron-transfer mediator or specific reagent. Accordingly, modified electrode can be used without any need for separation or pretreatment steps to detect clozapine in real samples.

Keywords: Clozapine, Go/Fe₃O₄/SiO₂nanocomposite, Voltammetry, Screen printed electrode, Modified electrode.

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