A CARBAZOL-9-YL-ACETIC ACID-BASED CONDUCTING POLYMER MODIFIED PENCIL GRAPHITE ELECTRODE FOR DETECTION OF PARACETAMOL

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Paracetamol (N-acetyl-p-aminophenol) is a commonly used analgesic and antipyretic drug. Paracetamol (PC) is accepted as a very effective treatment for the relief of pain and fever in adults and children. Generally, limited use of paracetamol does not exhibit any harmful side effects. However, overdosing and the chronic use of PC produce toxic metabolite accumulation that will cause kidney and liver damage [1, 2]. The high application potential of conducting polymers (CP) in chemical and biological sensors is one of the main reasons for the intensive investigation and development of these materials [3].

In this study, carbazol-9yl-acetic acid-based modified pencil graphite (PG) electrode was used for PC determination. Cyclic voltammetry was used to prepare carbazol-9yl-acetic acid-based polymer (CAABP) films on PG electrode. The voltammetric behavior of CAABP/PG electrode and determination of PC were investigated by differential pulse voltammetry (DPV) in phosphate buffer solution (PBS) at pH 6. The response current increased with the increase of PC concentration (Figure 1). Because of the prepared modified electrodes have low cost, chemical stability, its simple and rapid analysis of PC, they can be used as a sensor in the measurement of PC determination.

![Figure 1. DPV for (a) CAABP/PG modified electrode in PBS medium at pH 6.0 (b) 5 μM PC (with non-modified PG electrode) (c) 10.00 μM PC (with non-modified PG electrode) (d) 5.00 μM PC (with modified electrode) and (e) 10.00 μM PC (with modified electrode) in PBS at pH 6.0.](image)

References