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Electroanalysis of Estriol Hormone Using Electrochemical Sensor

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ABSTRACT

At present, there is the whole area of research community occupied with developing of new materials and fabrication of new biosensors. With the intention to propose an effective, quick and inexpensive method for determination of biomolecules. Here in, we report the electrocatalytic oxidation of Estriol (ET) was analysed by poly (glycine) modified carbon paste electrode (PGMCPE) using cyclic voltammetry and differential voltammetry. Compared to bare carbon paste electrode (BCPE), the PGMCPE indicates good electrocatalytic activity towards the oxidation of ET in phosphate buffer solution (PBS) pH 6. PGMCPE shows a linear response between concentrations of ET. The prepared modified electrode showed high voltammetric responses with sensitivity for ET, results showed it very suitable for the detection of ET at trace levels. Under the optimized conditions, the peak current was linear to ET concentration over the concentration range of 2×10^{-6} to 1×10^{-4} M using cyclic voltammetry (CV). The detection limit and limit of quantification were 8.7×10^{-7} M and 2.6×10^{-6} M. The proposed method was successfully applied for the determination of ET in the real samples

Keywords: Electrochemical sensor; Cyclic voltammetry; Estriol; Detection limit.

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