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**Voltammetric analysis of cocaine using platinum and glassy carbon electrodes chemically modified with Uranyl Schiff base films**

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**Abstract**

Platinum and glassy carbon electrodes chemically modified with films of Schiff bases of  $[\text{UO}_2(3\text{-MeOSalen})(\text{H}_2\text{O})]\cdot\text{H}_2\text{O}$  and  $[\text{UO}_2(5\text{-MeOSalen})(\text{H}_2\text{O})]\cdot\text{H}_2\text{O}$ , to determine cocaine were developed. The stability of these films in aqueous solution containing  $1.0 \text{ mol L}^{-1}$  KCl and HCl  $1.0 \text{ mM}$  in pH 3 as supporting electrolyte and conducted cyclic voltammetric analysis of cocaine in the same supporting electrolyte were investigated. A reversible interaction between cocaine and the working electrodes increased the original peak current of the surface-modifier, according to the employed species. The determination of cocaine using the developed electrodes depended linearly on cocaine concentration in the range  $0.54 - 9.10 \text{ } \mu\text{mol L}^{-1}$ , with amperometric sensitivities of  $5.21 \times 10^7$  and  $1.66 \times 10^5 \text{ } \mu\text{A mol}^{-1} \text{ L}$ , limits of quantification of  $0.29$  and  $0.50 \text{ } \mu\text{mol L}^{-1}$ , and limits of detection of  $0.07$  and  $0.15 \text{ } \mu\text{mol L}^{-1}$ , respectively.

**Keywords:** Forensic chemistry, cocaine, crack, Schiff bases, chemically modified electrodes, cyclic voltammetry.

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