

Supplementary Information

Square-Wave Voltammetric Determination of Paracetamol and Codeine in Pharmaceutical and Human Body Fluid Samples Using a Cathodically Pretreated Boron-Doped Diamond Electrode

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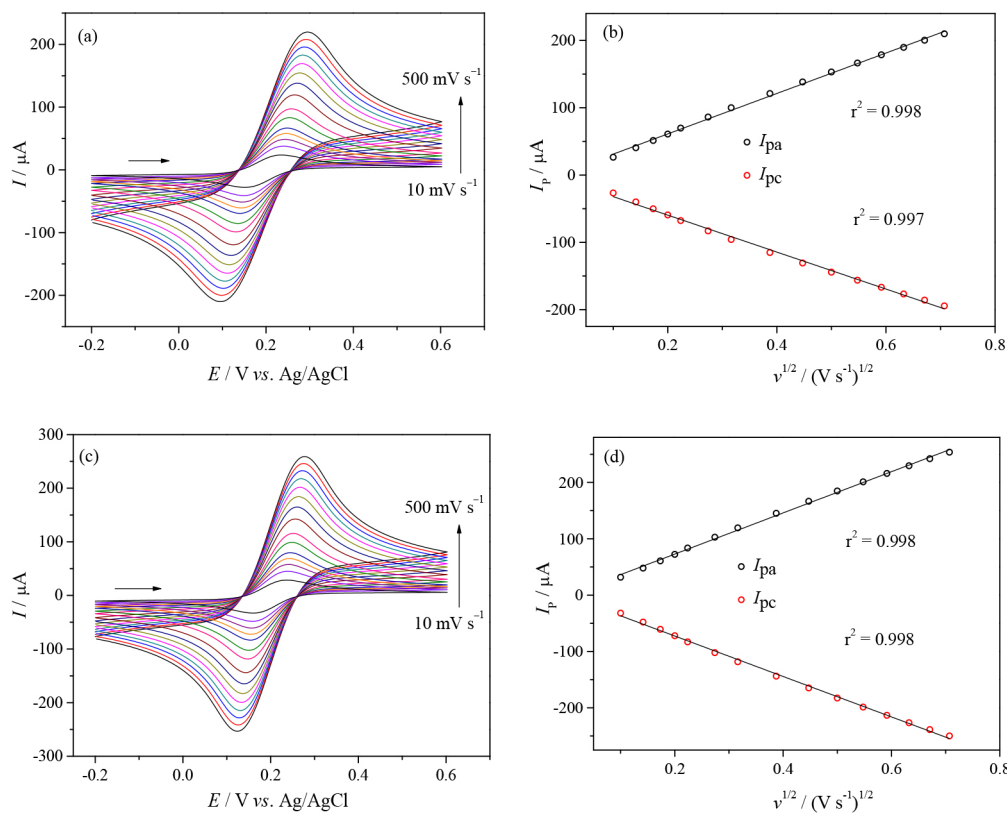


Figure S1. Cyclic voltammograms obtained for a 1.0 mmol L^{-1} $[\text{Fe}(\text{CN})_6]^{4-}$ solution in aqueous 0.10 mol L^{-1} KCl with (a) an anodically or (c) a cathodically pretreated BDD electrode at different potential scan rates (10, 20, 30, 40, 50, 80, 100, 150, 200, 250, 300, 350, 400, 450, and 500 mV s^{-1}). Plot of I_p values as a function of the square root of the potential scan rate ($v^{1/2}$) with (b) an anodically or (d) a cathodically pretreated BDD electrode.

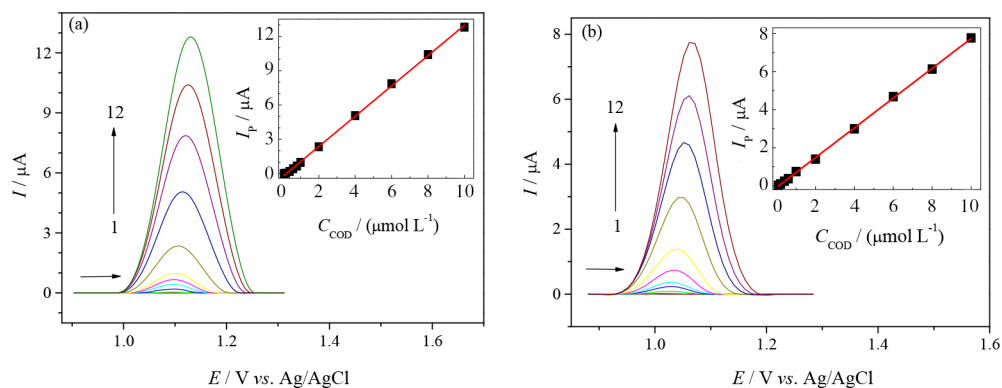


Figure S2. (a) Square-wave and (b) differential pulse voltammograms obtained using a cathodically pretreated BDD electrode for various concentrations of codeine (C_{COD} , 1-12): 0.09, 0.20, 0.40, 0.50, 0.79, 0.99, 1.98, 3.95, 5.91, 7.87, and 9.81 $\mu\text{mol L}^{-1}$. Conditions: (SWV) $a = 60 \text{ mV}$, $f = 60 \text{ Hz}$, and $\Delta E_s = 4 \text{ mV}$; (DPV) $v = 10 \text{ mV s}^{-1}$, $a = 90 \text{ mV}$, and $t = 10 \text{ ms}$.

Table S1. Analytical parameters obtained for the voltammetric determination of codeine using the SWV and DPV techniques

| Analytical parameter | SWV | DPV |
|---|-----------|-----------|
| Linear range / ($\mu\text{mol L}^{-1}$) | 0.09-9.81 | 0.09-9.81 |
| Sensitivity / (A L mol^{-1}) | 1.32 | 0.78 |
| Limit of detection / (nmol L^{-1}) | 1.19 | 1.40 |

SWV: square-wave voltammetry; DPV: differential pulse voltammetry.