

SUPPLEMENTARY MATERIAL

Heparin-stabilized gold nanoparticles embedded in graphene for the electrochemical determination of esculetin

Vinicius José da Silva, Luan Gabriel Baumgarten, Juliana Priscila Dreyer,
Edson Roberto Santana, Almir Spinelli, João Paulo Winiarski, Iolanda Cruz Vieira

*Laboratory of Biosensors
Federal University of Santa Catarina
Campus Universitário Reitor João David Ferreira Lima
88040-900 – Florianópolis, SC, Brazil*

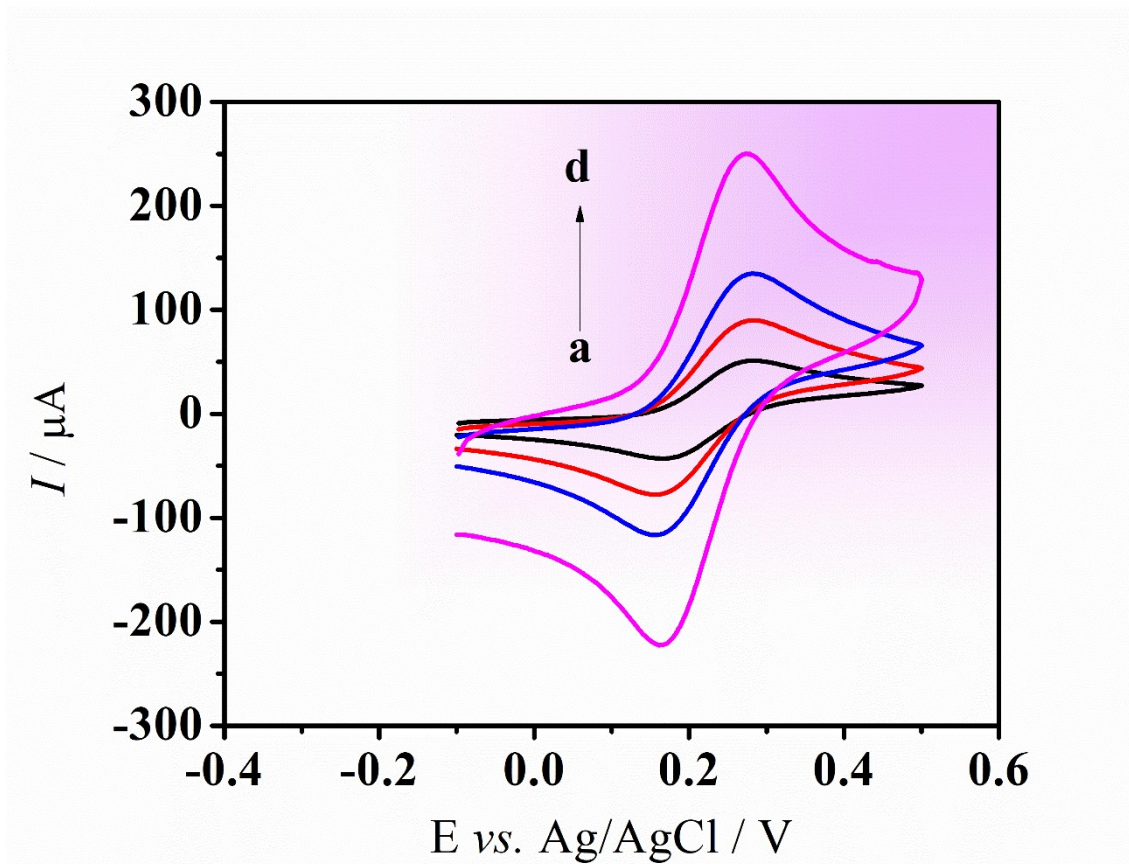


Figure S1. Cyclic voltammograms of different electrode configurations. Experimental conditions: $5.0 \text{ mmol L}^{-1} \text{ K}_4[\text{Fe}(\text{CN})_6]$ in $0.1 \text{ mol L}^{-1} \text{ KCl}$ using (a) bare GCE, (b) AuNP-Hep/GCE, (c) Gr- Hep/GCE, and (d) Gr-AuNP-Hep/GCE. $\nu = 100 \text{ mV s}^{-1}$.

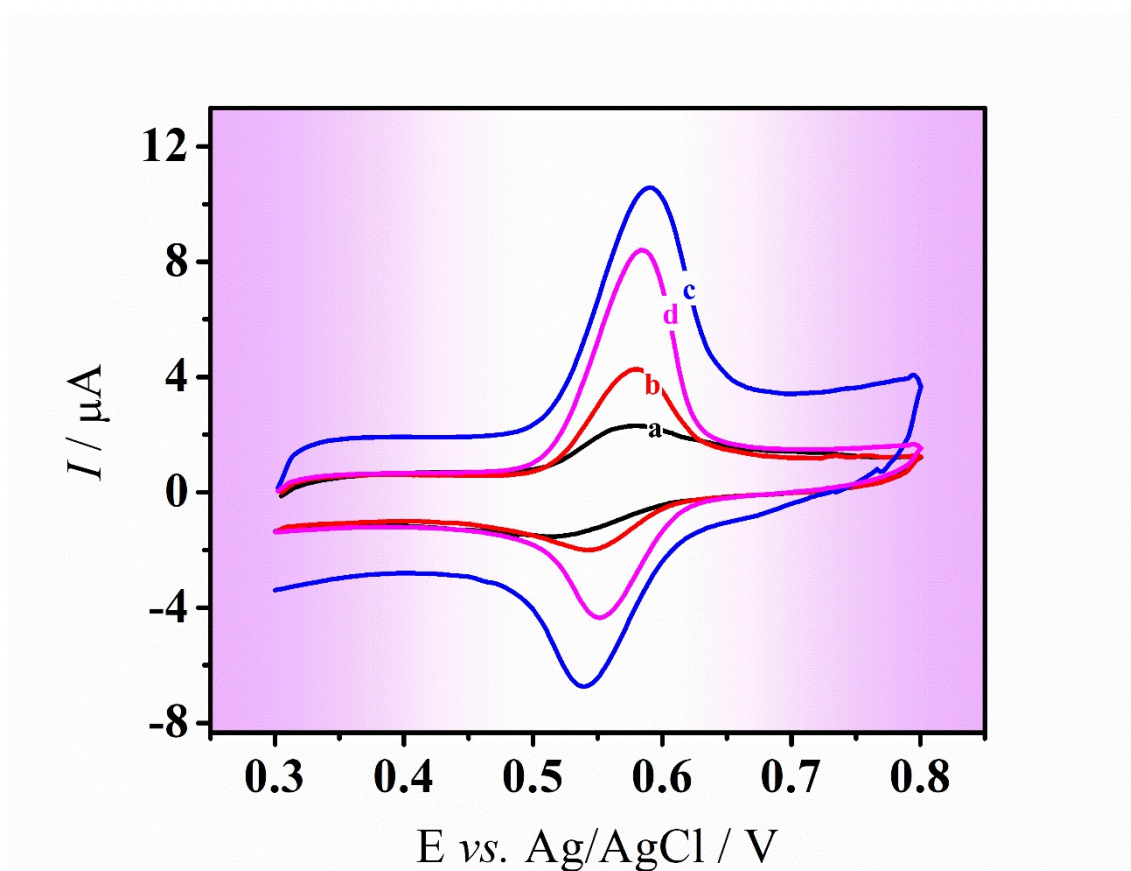


Figure S2. Cyclic voltammograms for $50.0 \mu\text{mol L}^{-1}$ ESC in 0.1 mol L^{-1} B-R buffer (pH 2.0) using the Gr-AuNP-Hep/GCE electrode containing different percentages of Gr (a) 0.1, (b) 0.2, (c) 0.3 and (d) 0.4 %.(w/v) $\nu = 100 \text{ mV s}^{-1}$.

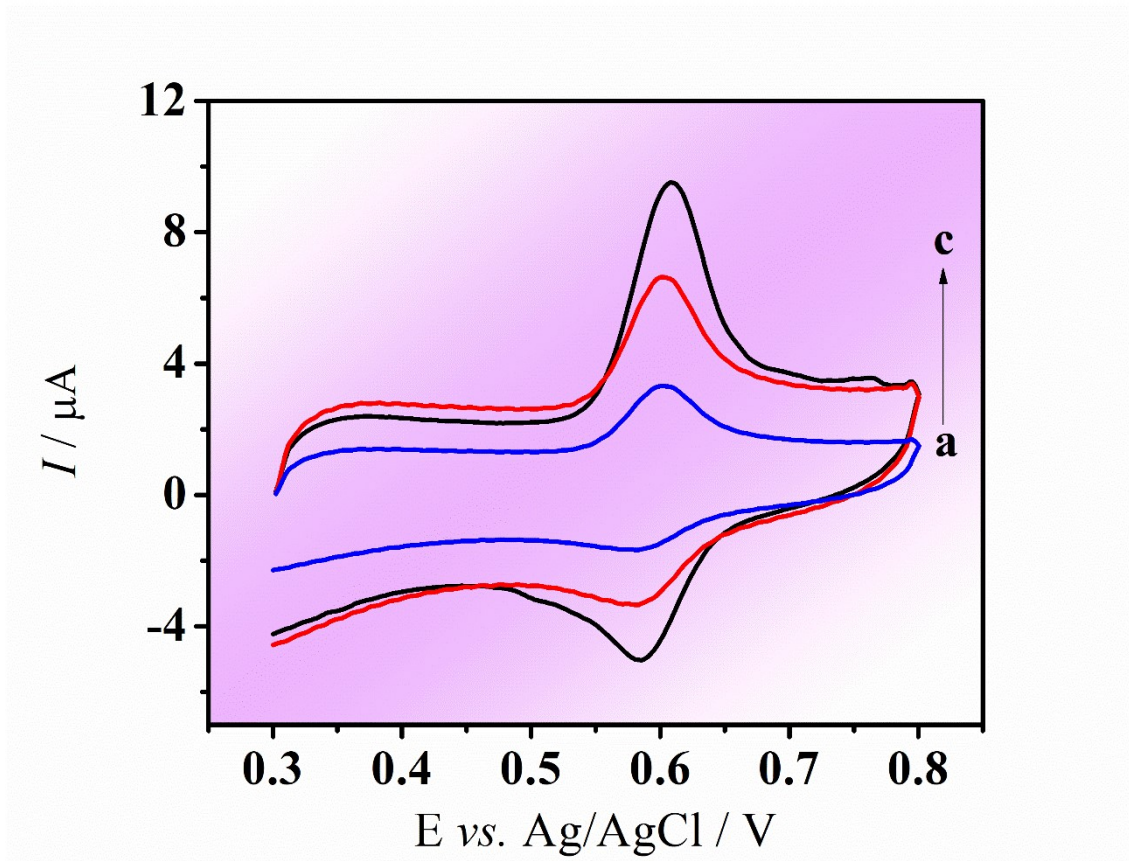


Figure S3. Cyclic voltammograms of $50.0 \mu\text{mol L}^{-1}$ ESC using the Gr-AuNP-Hep/GCE in different supporting electrolyte compositions (a) Clark-Lubs, (b) phosphate and (c) B-R with concentration of 0.1 mol L^{-1} and pH value 2.0. $\nu = 100 \text{ mV s}^{-1}$.

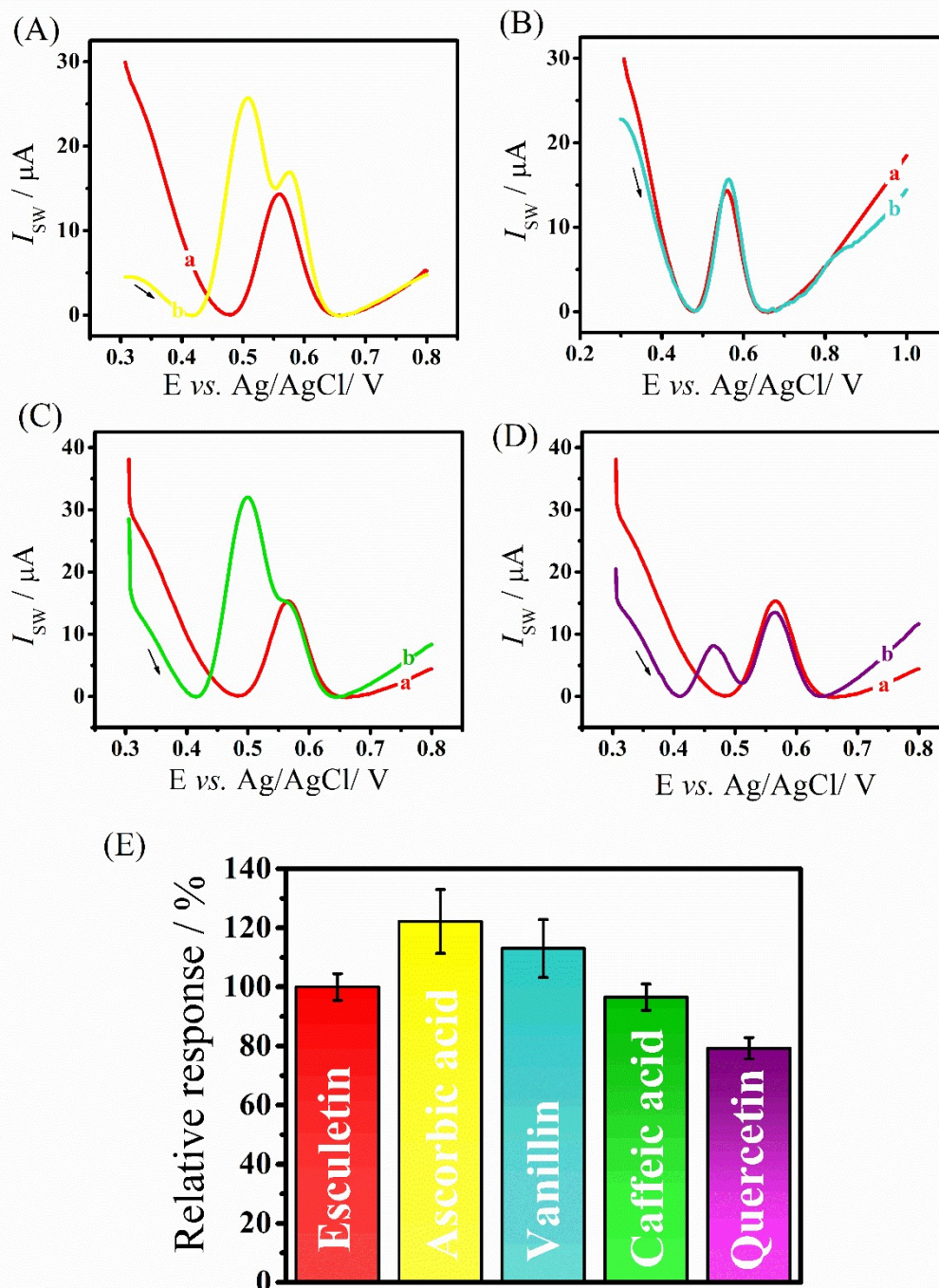


Figure S4. Square-wave voltammograms of 15.0 $\mu mol L^{-1}$ ESC using the Gr-AuNP-Hep/GCE in different interferent compounds with proportion of 1:5 (ESC:interferent): (A) Ascorbic Acid, (B) Vanillin, (C) Caffeic Acid and (D) Quercetin and (E) Bar graph of relative response vs. each interferent. In all the voltammograms (a) ESC and (b) interferent. Experimental conditions: B-R buffer 0.1 mol L^{-1} and pH value 2.0. SWV conditions: frequency 60 Hz, amplitude 50 mV, and potential increment 1.0 mV.