

Supplementary Information

Electrochemical Quantification of the Antioxidant Capacity of Medicinal Plants Using Biosensors. 2014, 14, 14423-14439

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Table S1. Optimization of the enzyme concentration, crosslinking agent and serum albumin quantities, in terms of the biosensor sensitivity, through the use of a 2³ experimental factorial design. The highest sensitivity corresponds for the biosensor constructed with 5.0 mg·mL⁻¹ Tyr, 5.0 mg·mL⁻¹ HAS and 2.5% GA.

Concentration	GA 2.5%		GA 1.0%	
	HSA 2.0 mg·mL ⁻¹	HSA 5.0 mg·mL ⁻¹	HSA 2.0 mg·mL ⁻¹	HSA 5.0 mg·mL ⁻¹
5 mg·mL ⁻¹	3.4 ± 0.9 nA·μM ⁻¹	26 ± 4 nA·μM ⁻¹	2.2 ± 0.6 nA·μM ⁻¹	5.7 ± 0.7 nA·μM ⁻¹
10 mg·mL ⁻¹	1.3 ± 0.2 nA·μM ⁻¹	5.2 ± 1.1 nA·μM ⁻¹	5.4 ± 1.4 nA·μM ⁻¹	6.9 ± 0.7 nA·μM ⁻¹

Figure S1. Typical cyclic voltammogram recorded in the system SPE/150 μM Catechol, 0.1 M acetates' buffer at $(30.0 \pm 0.5)^\circ\text{C}$ and at $\text{pH } 4.50 \pm 0.01$. The potential scan started at 0 V in the positive direction at 100 mVs^{-1} potential scan rate. It is possible to note that within the cathodic branch, after the oxidation of catechol to o-Q, the presence of a voltammetric peak at -300 mV corresponds to the reduction of o-Q to catechol.

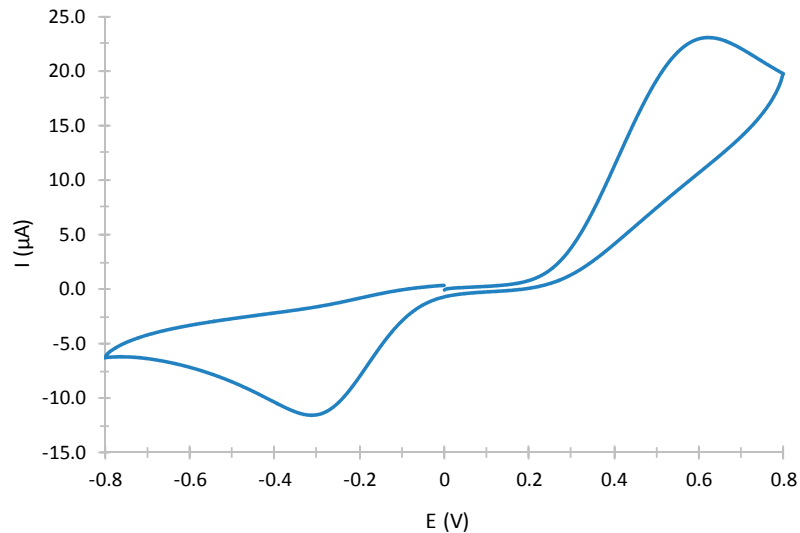


Figure S2. Variation of the relative signal (sensitivity) of the biosensor (SPE/Tyr/PVA) as a function of time. It is possible to note that after 12 months the relative signal of the biosensor is higher than 70% indicating that its useful life span is higher than 360 days.

