

L-Cysteine Determination in Embryo Cell Culture Media using Co (II)-phthalocyanine Nanoparticle Modified Disposable Screen-printed Electrodes

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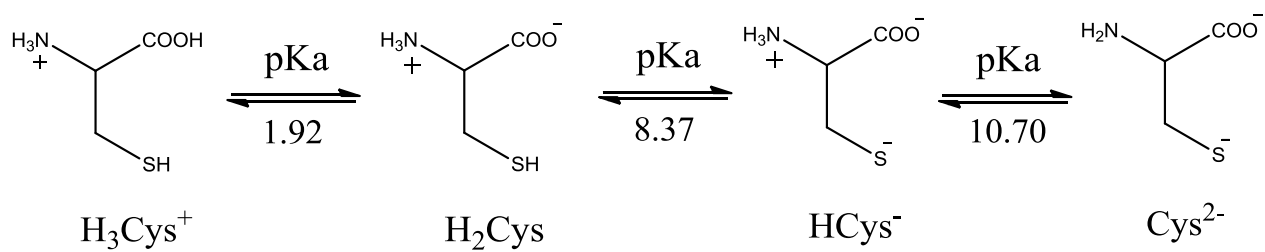
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Scheme ESI-1. Ionization processes for L-CySH in aqueous solution, depicting the major L-CySH forms depending on the solution pH.

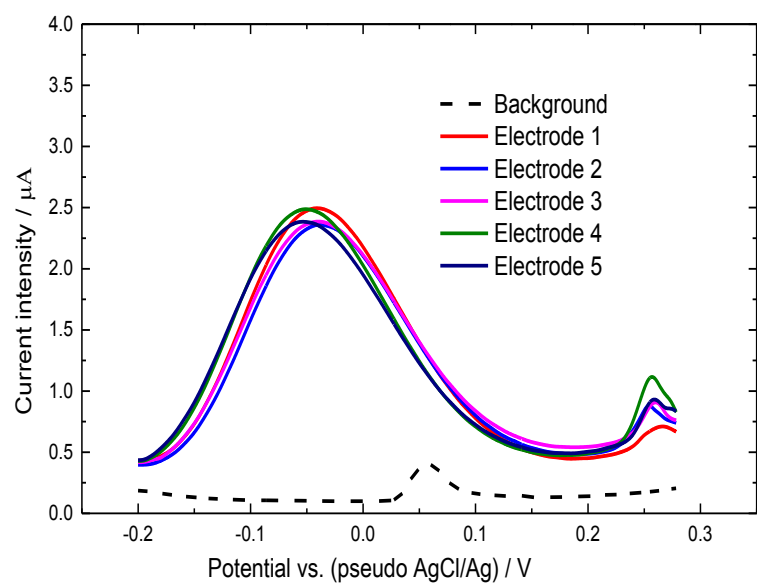


Fig. ESI-1. SWVs of a 50 μM L-CySH solution in 0.1 M PBS pH 7.0 at different CoPc-SPEs.

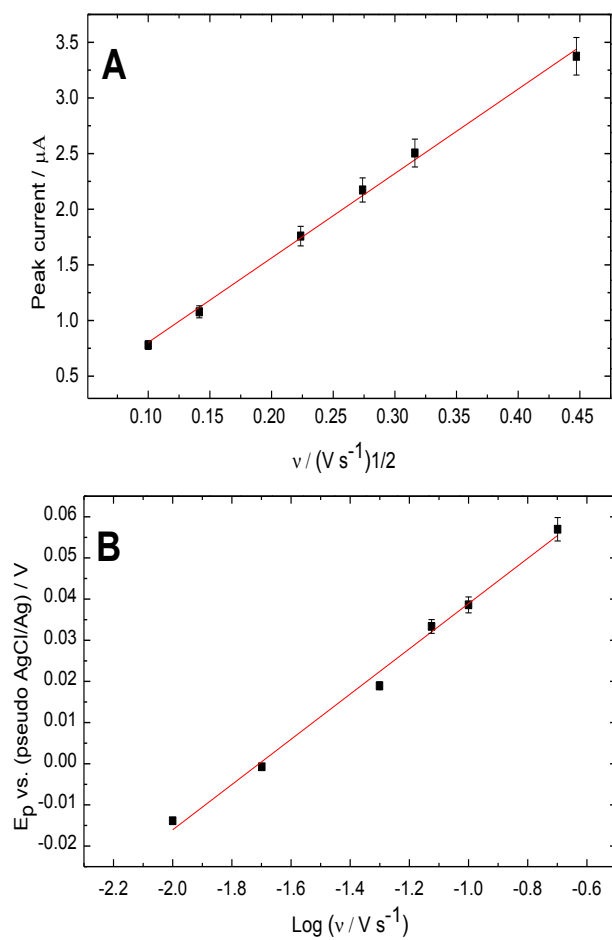


Fig. ESI-2. (A) Plot of peak current as a function of square root of the scan rate. (B) Plot of peak potential E_p as a function of $\text{Log}_{10} v$. All experiments performed at $50 \mu\text{M}$ L-CySH in 0.1 M PBS pH 7.0.

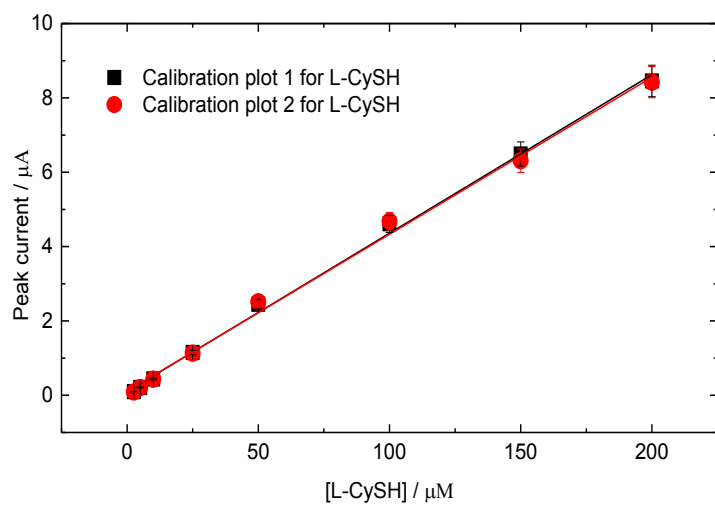


Fig. ESI-3. Plots of peak current versus L-CySH concentration obtained from the SWV responses for the electrooxidation of L-CySH at a peak potential of 0 V, demonstrating the reproducibility of two calibration curves.

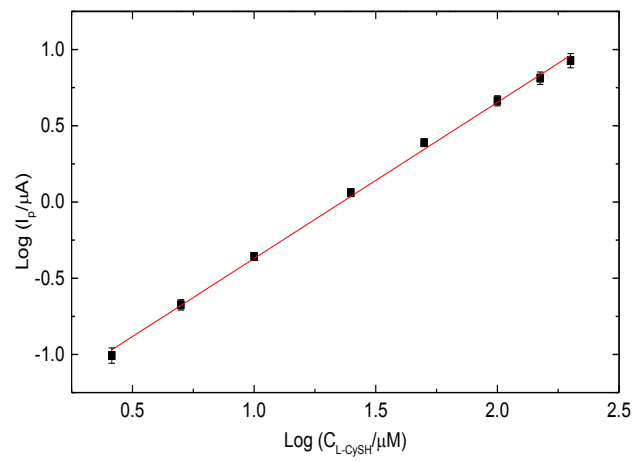


Fig. ESI-4. Plot of \log_{10} of peak current as a function of \log_{10} of L-CySH concentration at CoPc-SPE. Data obtained from Figure 6 in the main manuscript.

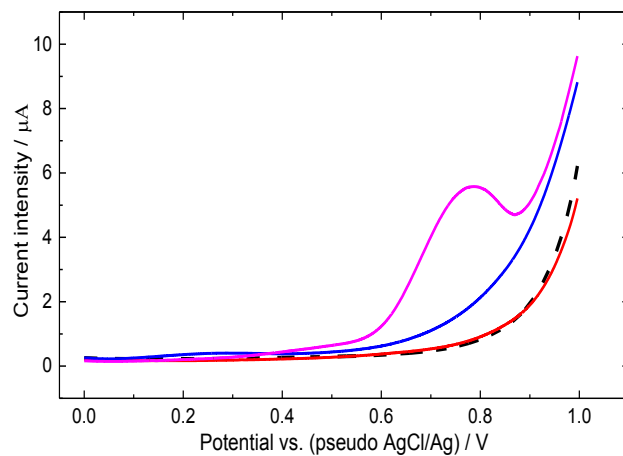


Fig. ESI-5. SWV responses for the electrooxidation of 50 μM DL-Met (pink trace), 100 μM L-Cystine (blue line) and 100 μM L-Cysteic acid (red line) solutions. SWV response of 0.1 M PBS pH 7.0 is highlighted in a black dashed trace.

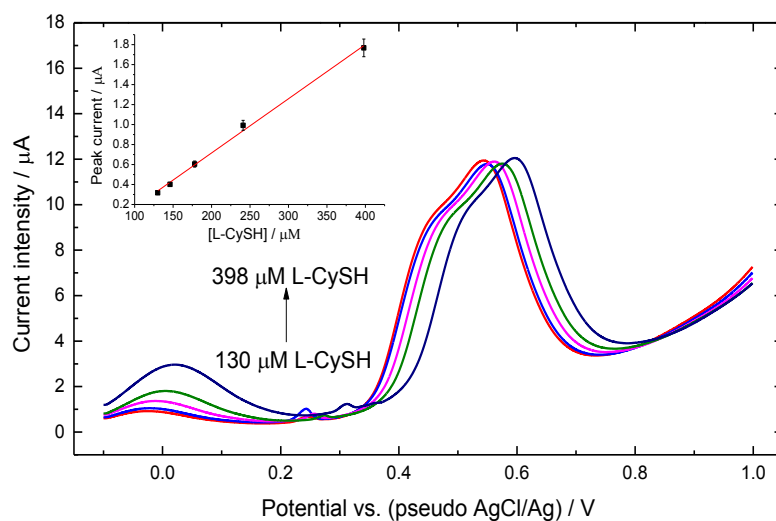


Fig. ESI-6. SWV responses for the electrooxidation of L-CySH as a function of concentration in 0.1 M PBS pH 7.0 at CoPc SPE under the simultaneous presence of 300 μM of L-Tryptophan, L-Tyrosine, L-Serine, L-Asparagine, L-Glutamine, L-Glutamic acid, L-Alanine, L-Proline, L-Methionine, L-Aspartic acid, L-Histidine, L-Phenylalanine. Inset figure shows the calibration plot of peak current recorded at 0 V with the presence of 130.0, 146.0, 178.0, 241.0, 398.0 μM L-CySH.

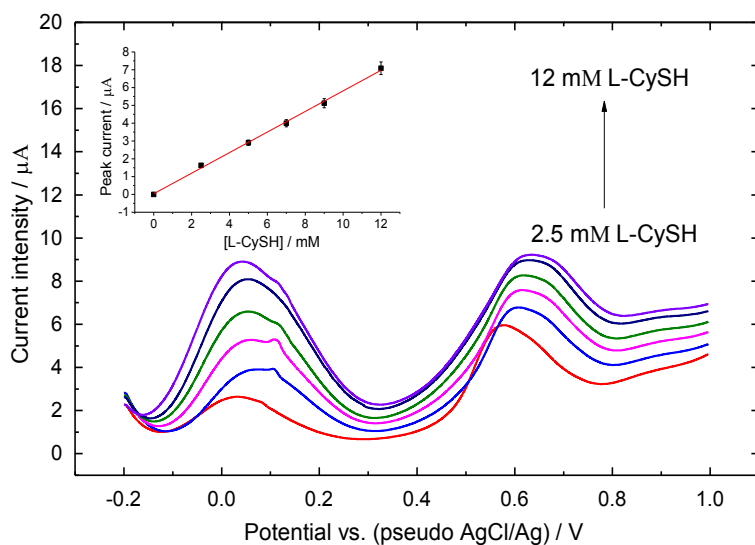


Fig. ESI-7. SWV responses for the electrooxidation of L-CySH within a G2 Vitrolife cell culture medium upon different L-CySH concentrations (2.5, 5.0, 7.0, 9.0, 10.0, 12.0 mM) at CoPc/SPE. Inset figure depicts the calibration plot of peak current recorded at 0 V as a function of L-CySH concentration.

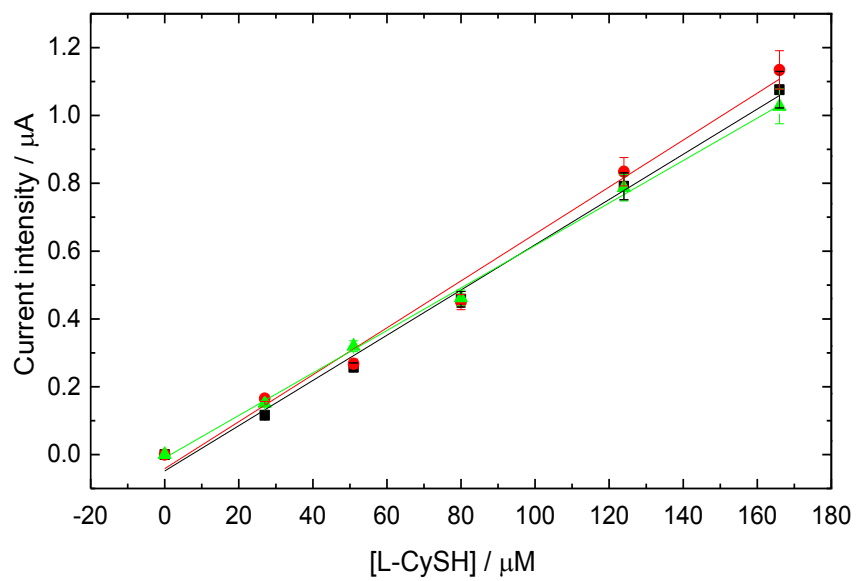


Fig. ESI-8. Three calibration plots of peak current versus L-CySH concentration (27.0, 51.0, 80.0, 124.0, 166.0 μM) within a G2 Vitrolife cell culture medium.