

Supplementary Information

Electrodeposited acetaminophen as a bifunctional electrocatalyst for simultaneous determination of ascorbic acid, glutathione, adrenaline and tryptophan

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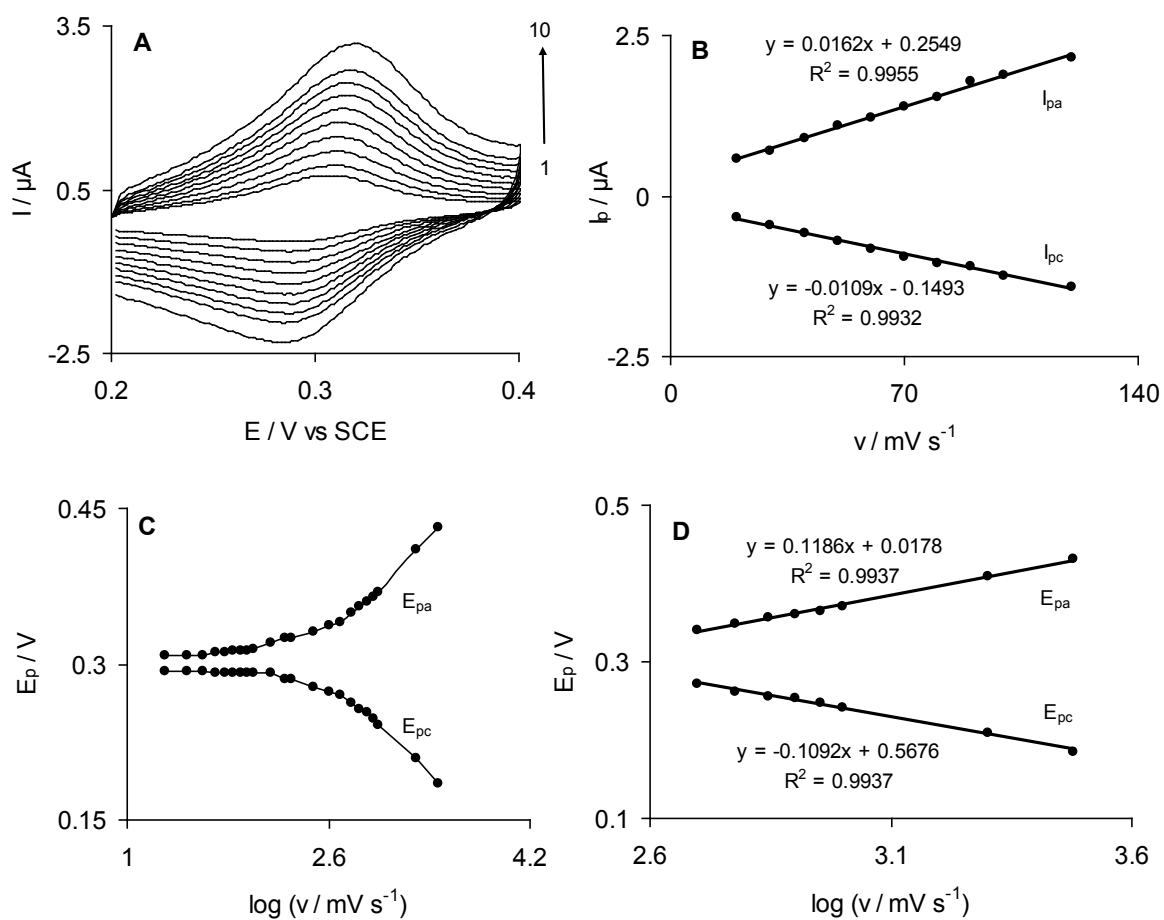


Fig. S1. (A) Cyclic voltammograms of an ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) at different scan rates. The numbers 1 to 10 correspond to 20, 30, 40, 50, 60, 70, 80, 90, 100 and 120 mV s^{-1} respectively. (B) Plots of the anodic and cathodic peak currents vs. the square root of scan rate. (C) Variation of the peak potentials vs. the logarithm of the scan rate. (D) Magnification of the same plot for high scan rates.

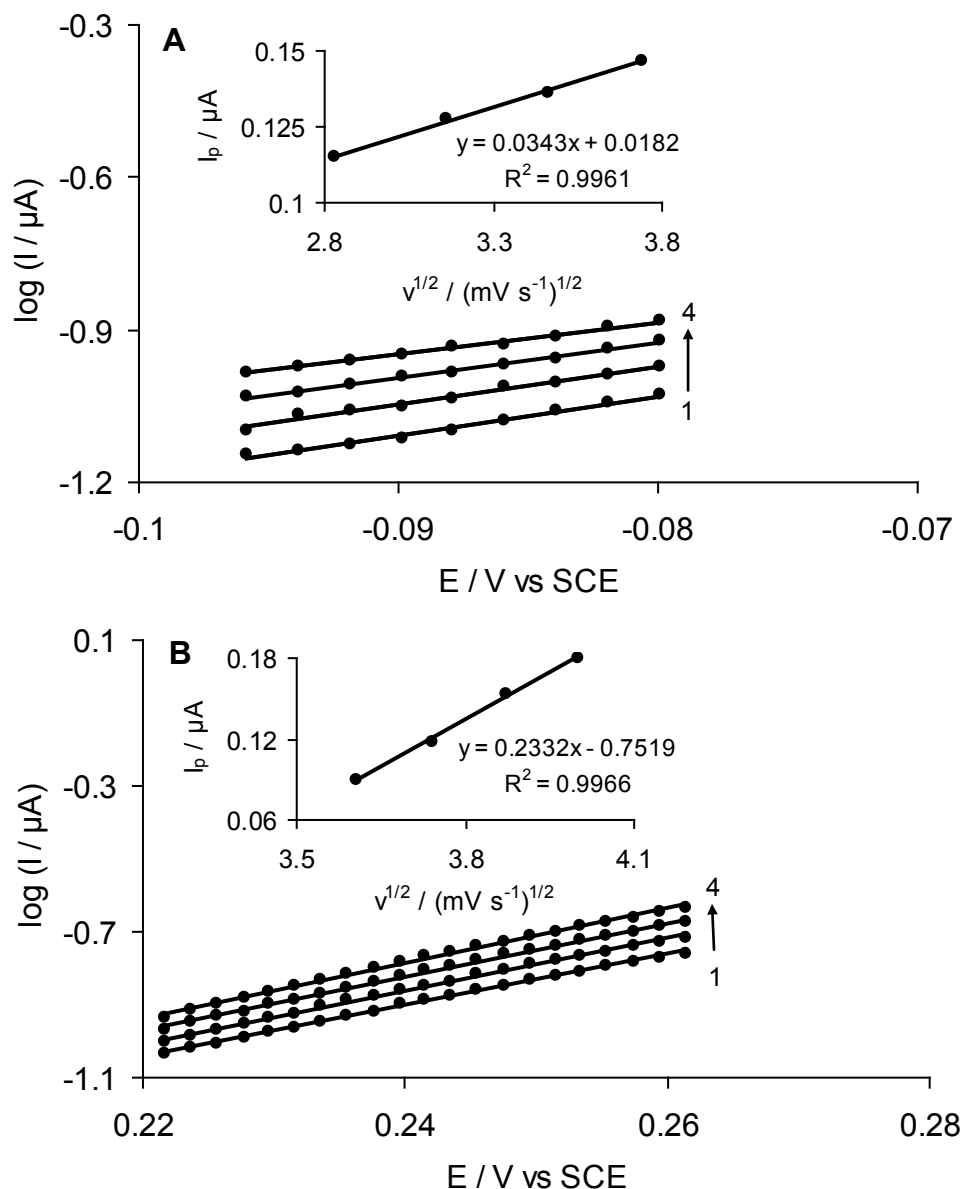


Fig. S2. (A) Tafel plots drawn from the cyclic voltammograms of ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) containing 0.055 mM AA recorded at different scan rates. The numbers of 1-4 correspond to 8, 10, 12 and 14 mV s^{-1} respectively. Inset shows plots of the electrocatalytic currents vs. the square root of sweep rate. (B) Tafel plots obtained from the cyclic voltammograms of an ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) containing 0.12 mM GSH at different scan rates. The numbers of 1-4 correspond to 13, 14, 15 and 16 mV s^{-1} respectively. Inset shows plots of the electrocatalytic currents vs. the square root of sweep rate.

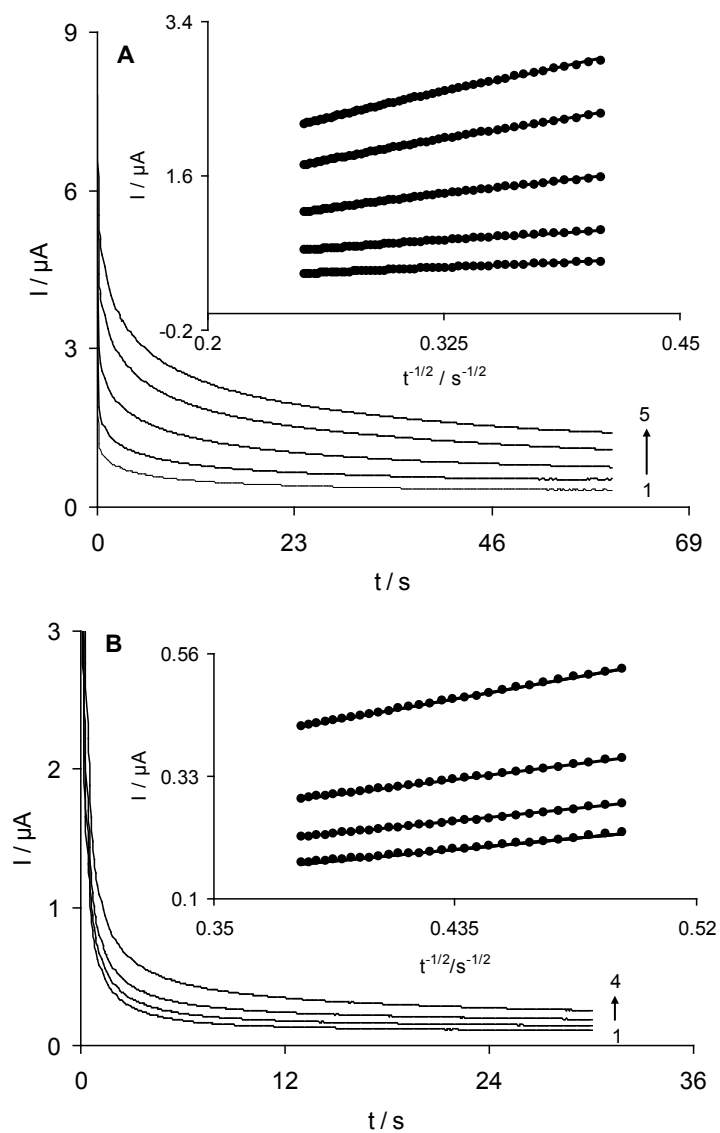


Fig. S3. (A) Chronoamperograms of an ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) at potential step of 33 mV for different concentrations of AA. The numbers of 1-5 correspond to 0.1, 0.2, 0.4, 0.6 and 0.8 mM of AA respectively. Inset shows the plots of I vs. $t^{-1/2}$ obtained from the data of chronoamperograms. (B) Chronoamperograms of an ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) at potential step of 330 mV for different concentrations of GSH. The numbers of 1-4 correspond to 0.01, 0.03, 0.05 and 0.07 mM of GSH respectively. Inset shows plots of I vs. $t^{-1/2}$ obtained from the data of

chronoamperograms.

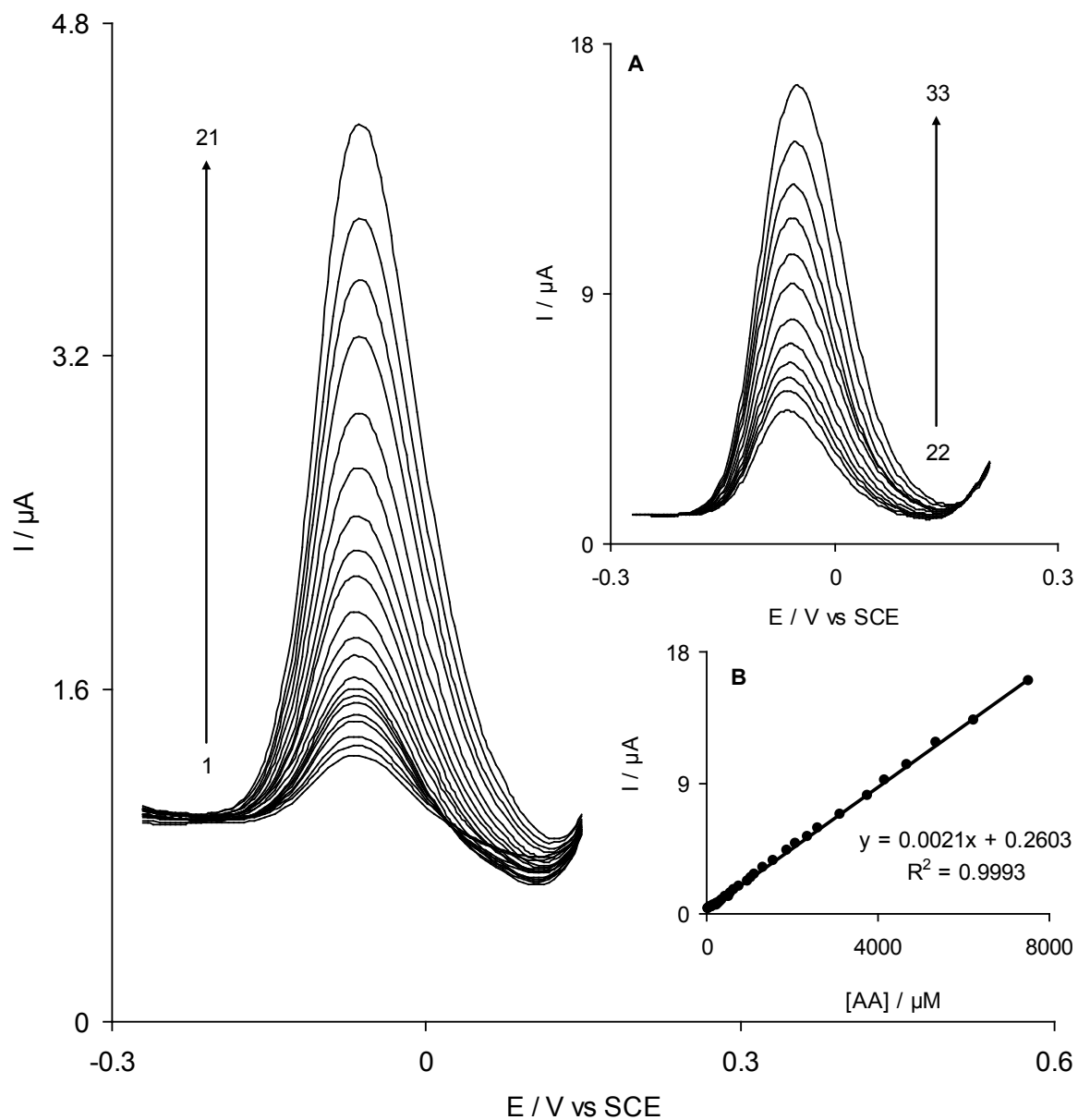


Fig. S4. Differential pulse voltammograms of an ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) containing different concentrations of AA. The numbers of 1–21 correspond to 30.0–1320.0 μM of AA. Insets: (A) DPVs obtained under similar conditions of Fig. S4 for the concentration range 1540.0–7500.0 μM of AA. (B) The plot of the electrocatalytic peak current as a function of AA concentration in the range of 30.0–7500.0 μM.

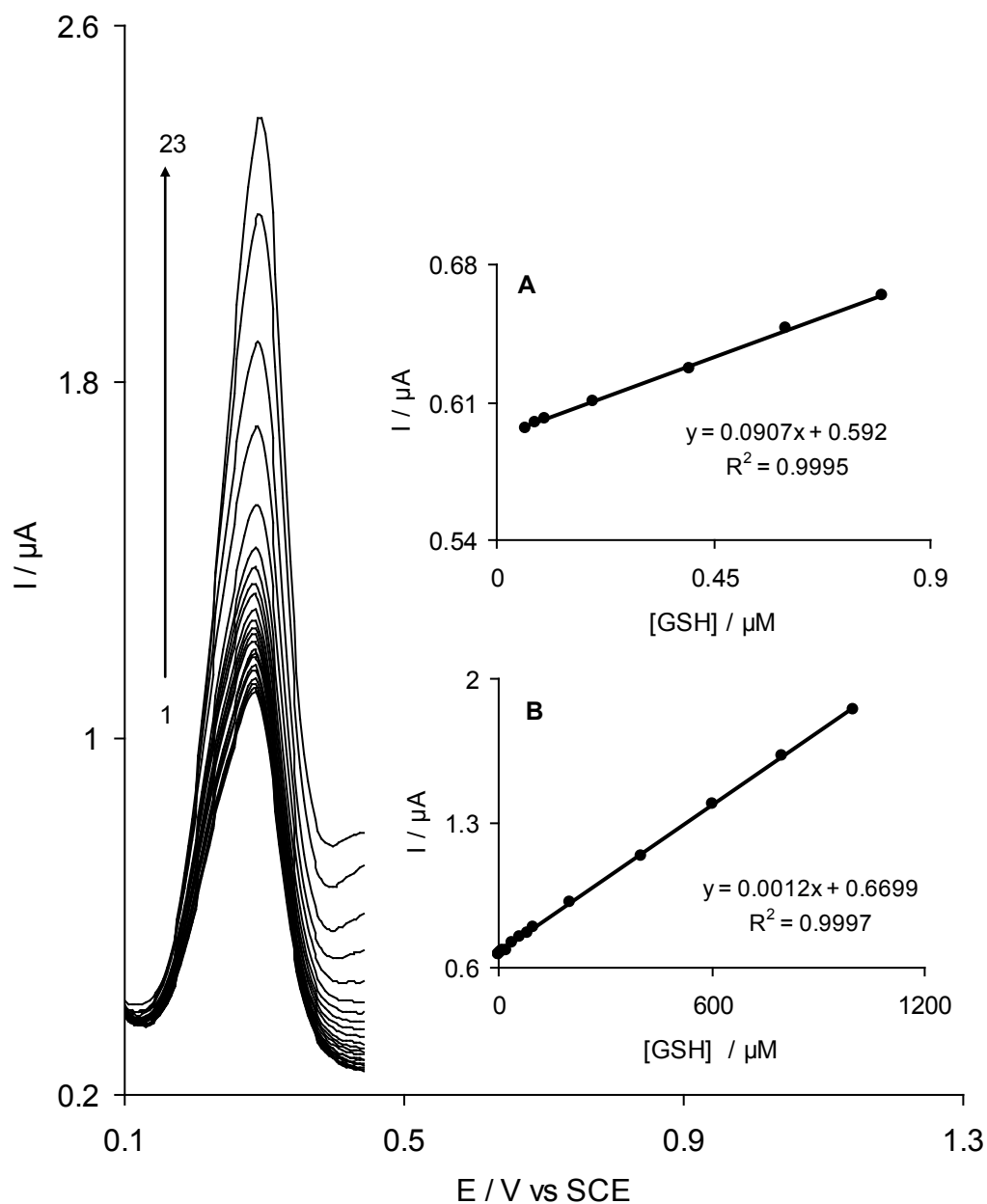


Fig. S5. Differential pulse voltammograms of an ACMGCE in a 0.1 M phosphate buffer solution (pH 7.0) containing different concentrations of GSH. The numbers of 1–23 correspond to 0.06–1000.0 μM of GSH. Insets of (A) and (B) show plots of the electrocatalytic peak currents as a function of GSH concentrations in the two ranges of 0.06–0.8 μM and 0.8–1000.0 μM of GSH respectively.