

Supporting information

Rapid simultaneous electrochemical sensing of tea polyphenols

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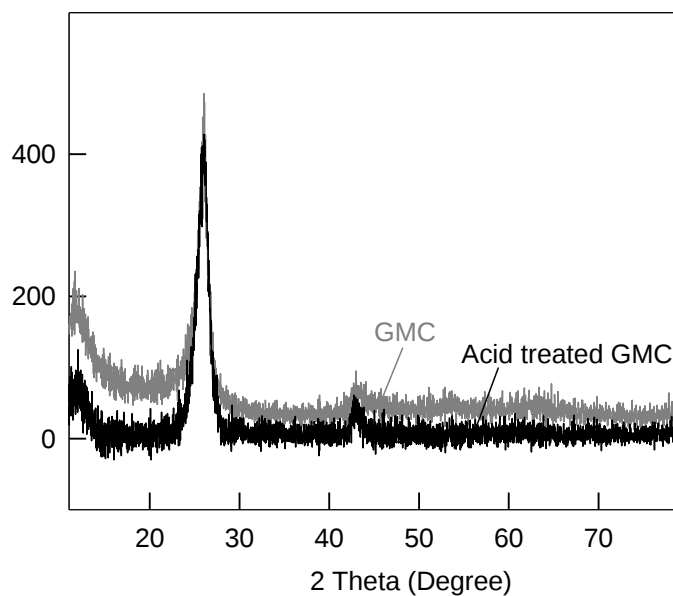


Fig. S1. XRD patterns of GMC before and after acid treatment.

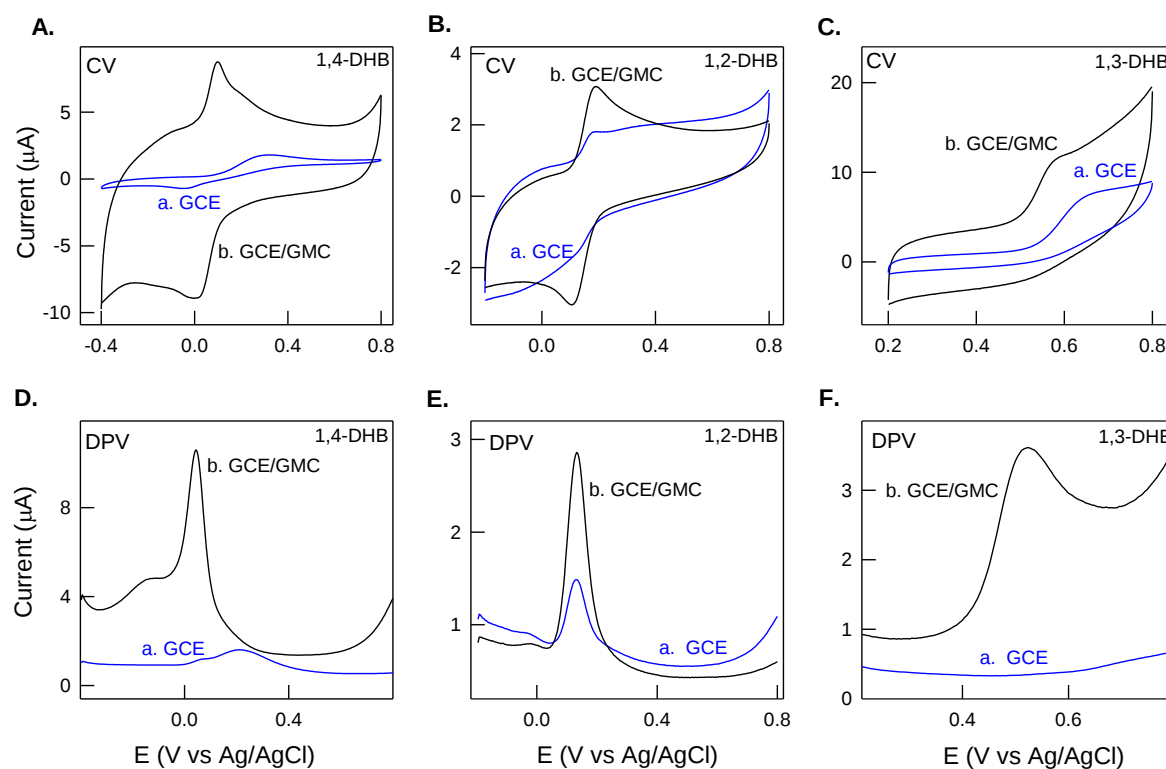


Fig. S2. Discrete CV (A-C) and DPV (D-F) responses of the electrochemical oxidations of 1,4-DHB (200 μM), 1,2-DHB (100 μM) and 1,3-DHB (300 μM) at unmodified GCE and GCE/GMC in pH 7 phosphate buffer solution. CV scan rate = 50 mV/s. DPV parameters are: amplitude = 50 mV; increment potential = 4 mV; pulse width = 0.2 s; pulse period = 0.5 sec.

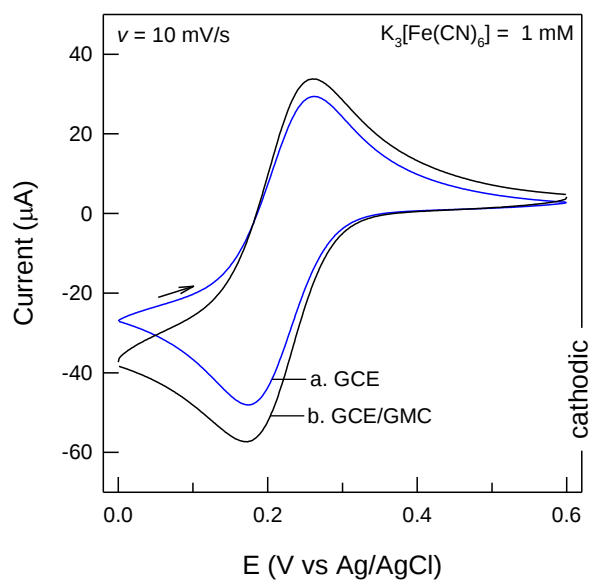


Fig. S3. Typical CV responses of bare GCE (a) and GCE/GMC (acid treated) (b) with 1 mM of $\text{K}_3[\text{Fe}(\text{CN})_6]$ in 0.5 M KCl solution at a $\nu = 10 \text{ mVs}^{-1}$.

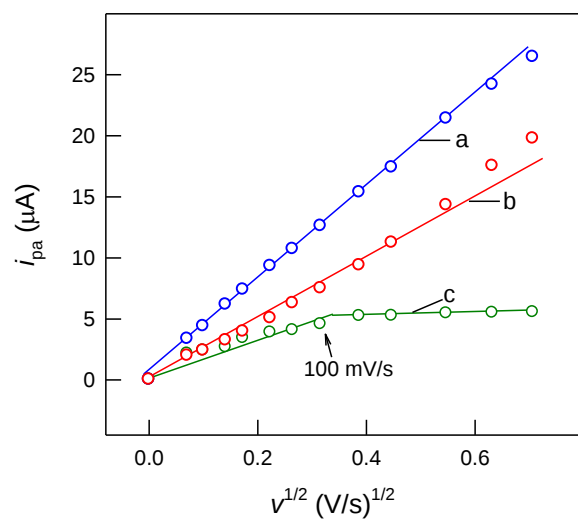


Fig. S4. Plot of i_{pa} vs $v^{1/2}$ from the effect of CV scan rate (5—500 mV/s) for the electrochemical oxidation of (a) 1,4-DHB (200 μM), (b) 1,2-DHB (100 μM) and (c) 1,3-DHB (300 μM) at GCE/GMC in pH 7 phosphate buffer solution.

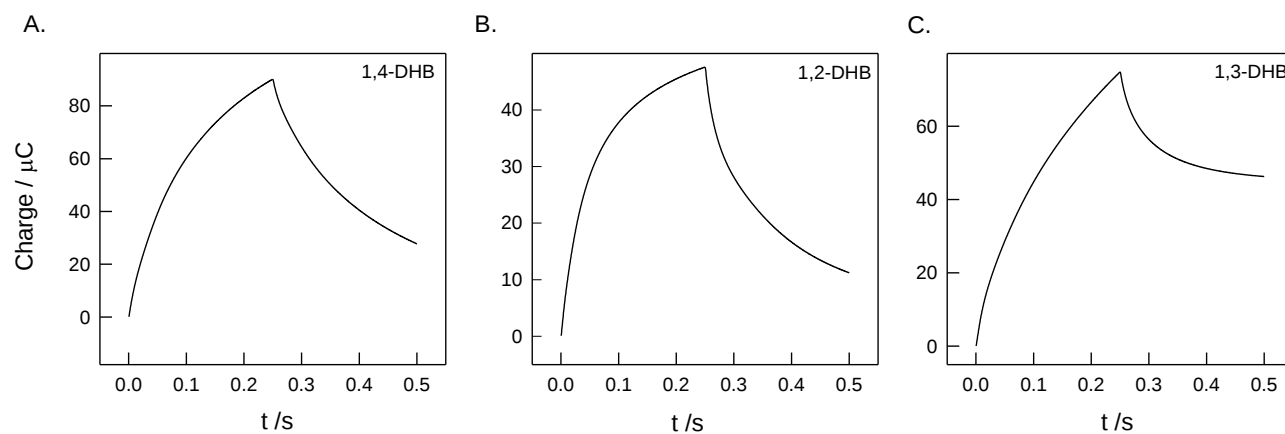


Figure S5. Chronocoulometric responses of 1,4-DHB (A), 1,2-DHB (B) and 1,3-DHB (C) at a potential window of -0.2 to 0.4 V, 0 to 0.6 V and 0.2 to 0.8 V respectively, at GCE/GMC in pH 7 PB solution. Pulse width = 0.25 s.

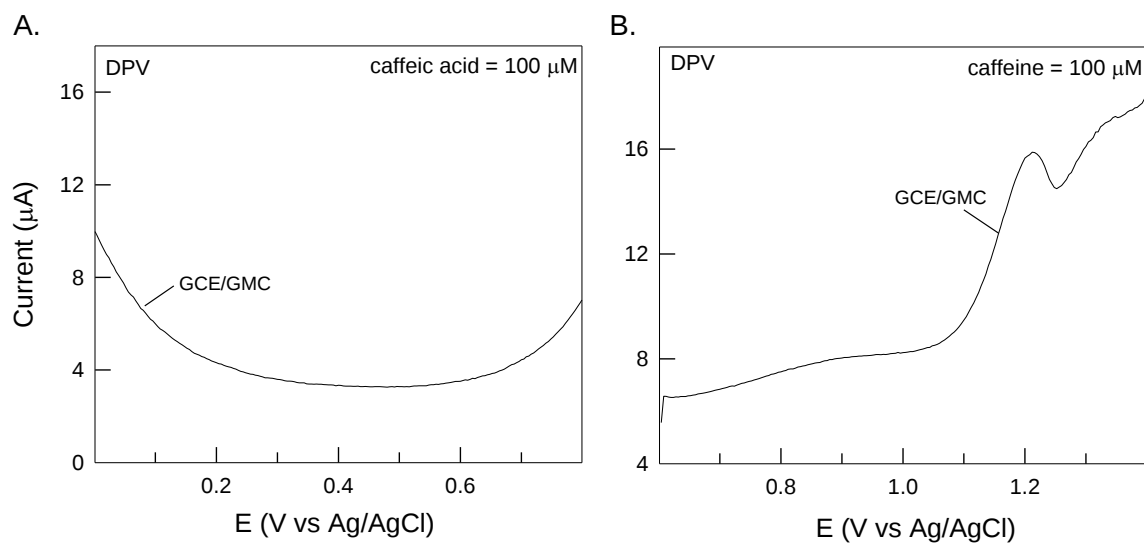


Fig. S6. DPV responses of caffeic acid (A) and caffeine (B) at GCE/GMC in pH 7 phosphate buffer solution.

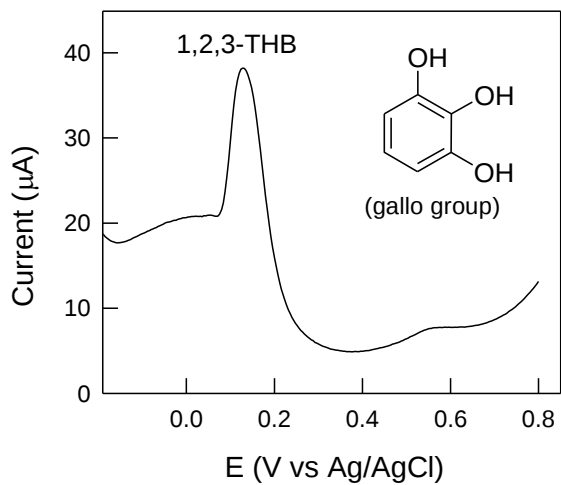


Fig. S7. DPV response of 1,2,3-THB at GCE/GMC in pH 7 phosphate buffer solution.