Supplementary material

Sensitive and selective detection of the highly toxic pesticide carbofuran in vegetable samples by a molecularly imprinted electrochemical sensor with signal enhancement by AuNPs

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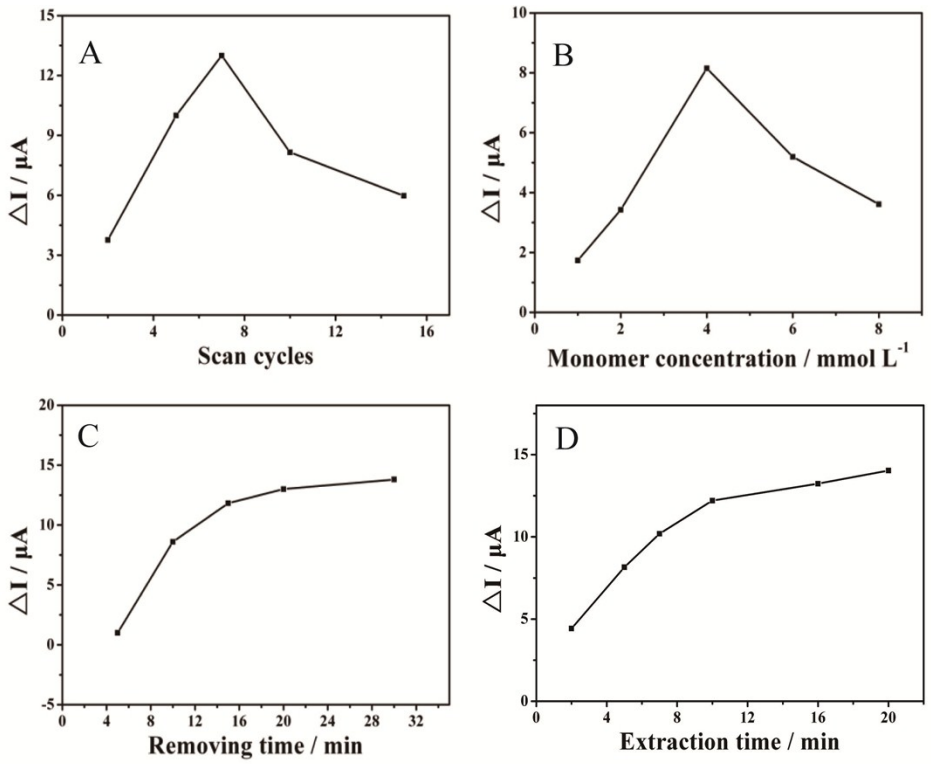

Fig.S1 Effect of (A) scan cycles, (B) monomer concentration, (C) removing time and (D) incubation time on the current response (ΔI) of the obtained sensor.

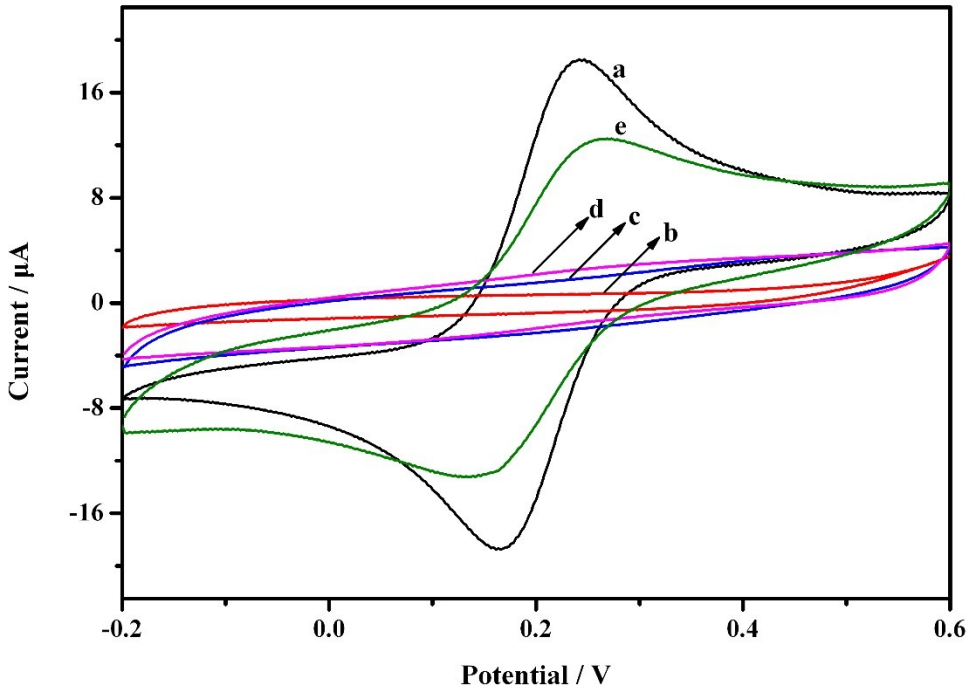

Fig.S2 (A) The selection of the solvent for template removal. Cyclic voltammograms of (a) AuNPs/GCE, (b) MIP/AuNPs/GCE before removing carbofuran, (c) MIP/Au NPs/GCE after removing carbofuran by methyl alcohol-acetic acid (9:1, V/V) solution, (d) MIP/AuNPs/GCE after removing carbofuran by 0.1 mol L^{-1} sulphuric acid, and (e) MIP/AuNPs/GCE after removing carbofuran by 0.1 mol L^{-1} sodium hydroxide methanol. Detection solution: 1 mmol L^{-1} $K_3Fe(CN)_6/K_4Fe(CN)_6$ (1:1) containing 0.1 mol L^{-1} KCl solution. Removal time: 20 min, scan rate: 0.05 V s^{-1}.

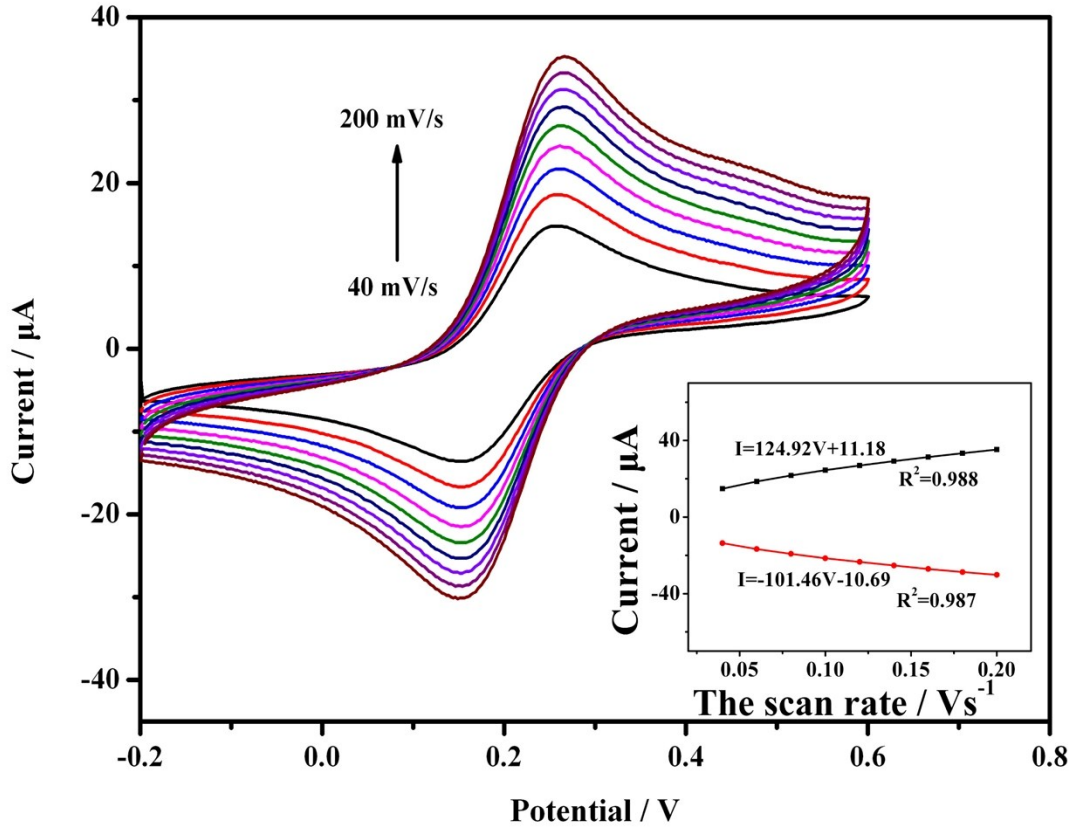

Fig.S3 Cyclic voltammograms of the MIP/Au NPs/GCE in 1 mmol L^{-1} $K_3Fe(CN)_6/K_4Fe(CN)_6$ (1:1) containing 0.1 mol L^{-1}KCl solution at the scan rate of 0.04, 0.06, 0.08, 0.1, 0.12, 0.14, 0.16, 0.18 and 0.2 V s^{-1}. Inset: the anodic peak current (top) and catholic peak current (bottom) vs. the scan rate.