

Supplementary Material

Facile Gold-Nanoparticle Boosted Graphene Sensor Fabrication Enhanced Biochemical Signal Detection

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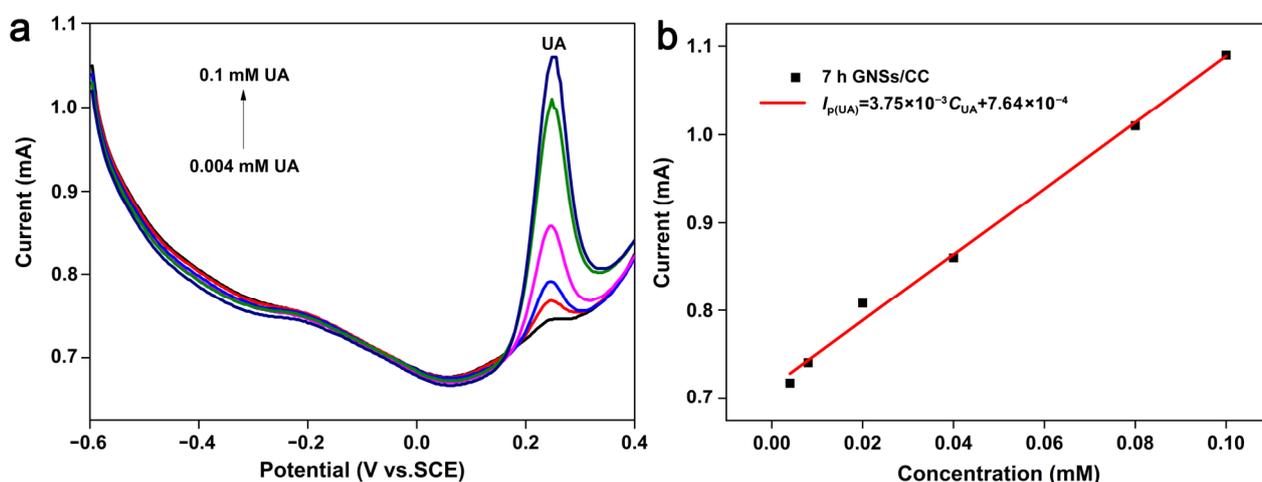


Figure S1. (a) DPV curve of UA detected by 7 h GNSs/CC electrode. (b) Fitting curve of current and concentration of UA detected by 7 h GNSs/CC electrode.

Figure S1a shows the DPV curve of the 7 h GNSs/CC electrode in 0.1 M PBS solution at a rate of 50 mV s^{-1} from -0.6 to 0.4 V of UA at different concentrations. The oxidation peak potential of UA was 264 mV . When the concentration of UA increased, the oxidation peak potential position almost did not move. Fig. S1b shows the fitting curve of the corresponding current and concentration. With an increase in UA concentration, the corresponding peak current increased gradually and the peak current was correlated linearly with the corresponding concentration. The linear equation was $I_{p(\mu\text{A})} = 3750 C_{UA} + 763.6$ ($R^2 = 0.994$) and the linear concentration range was 0.004 – 0.1 mM. The sensitivity of the 7-h GNSs/CC electrode to UA was $1875 \mu\text{A mM}^{-1} \text{ cm}^{-2}$, and the minimum detection concentration was 0.001 mM.