

## Supporting Information

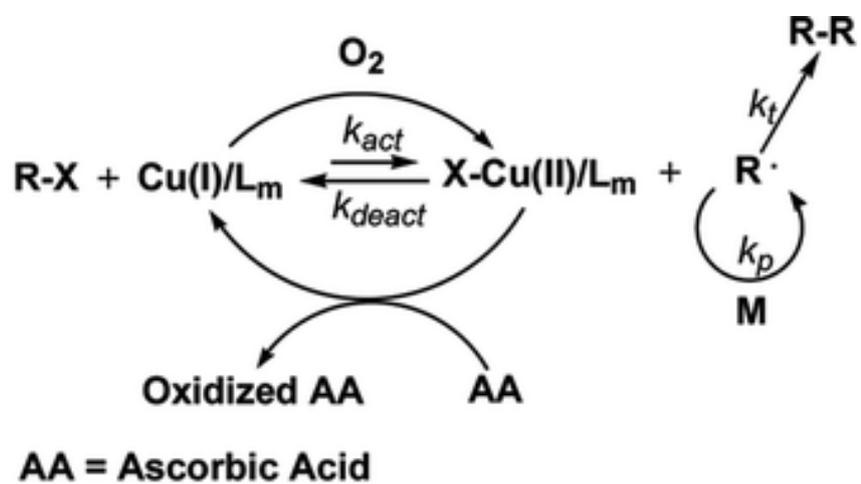
### **Polymerization-assisted signal amplification for electrochemical detection of biomarkers**

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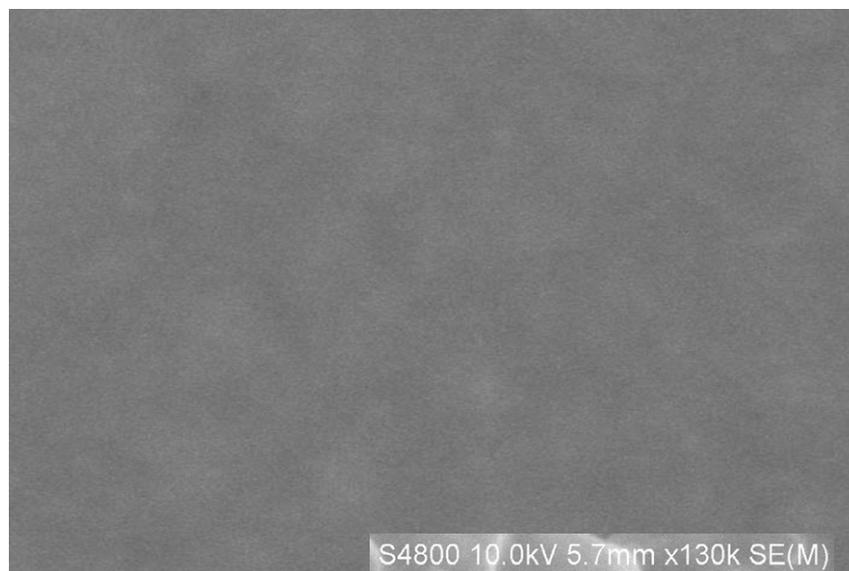
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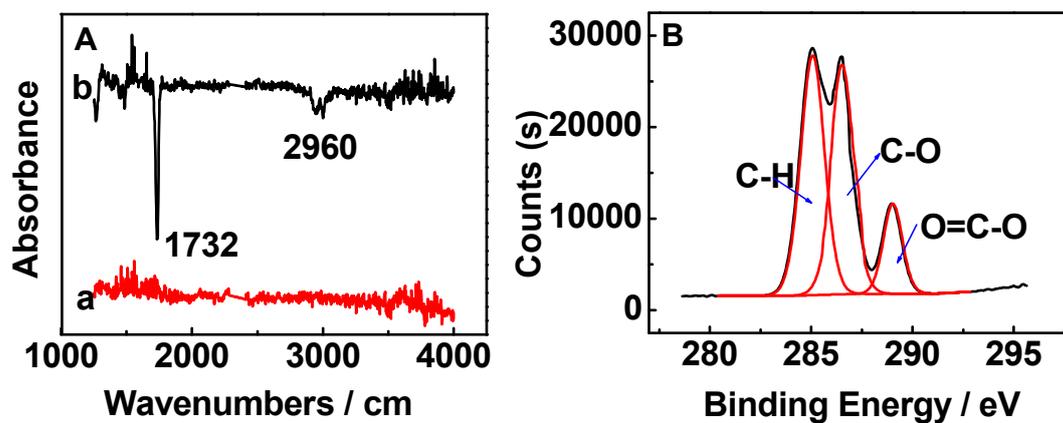
**Figure S1.** AGET ATRP mechanism.



**Figure S2.** The representative SEM image of the substrate Ab2<sup>\*</sup>-Ag-Ab1-Au.



**Figure S3.** (A) The surface reflectance FT-IR spectrum of the Au surface, a is  $\text{Ab2}^*$ -Ag-Ab1-Au, b is PGMA-Ab2-Ag-Ab1-Au; (B) X-ray photoelectron spectroscopy analysis. C 1s core-level spectra of the  $\text{Ab2}^*/\text{Ag}/\text{Ab1}/\text{Au}$  surface subjected to AGET ATRP of GMA for 2 h.



**Figure S4.** Plots of the the reduction peak currents of FcNH<sub>2</sub> against the coupling time of FcNH<sub>2</sub> and PGMA, the concentration of PSA is 40 ng mL<sup>-1</sup>, AGET ATRP reaction time is 2 h.

