Electronic Supplementary Information for

Multiplex Acute Leukemia Cytosensing Using Multifunctional Hybrid Electrochemical Nanoprobes at Hierarchically Nanoarchitectured Electrode Interface

Tingting Zheng,[a,b] Tingting Tan,[c] Qingfeng Zhang,[b] Jia-Ju Fu,[a] Jia-Jun Wu,[a] Kui Zhang,[c] Jun-Jie Zhu,[a,*] and Hui Wang[b,*]

[a] State Key Laboratory of Analytical Chemistry for Life Science, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, Jiangsu 210093, China

[b] Department of Chemistry and Biochemistry, University of South Carolina, 631 Sumter Street, Columbia, South Carolina 29208, United States

[c] Department of Medical Laboratory, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, Jiangsu 210008, China

* Corresponding authors. Emails: jjzhu@nju.edu.cn (J.-J. Zhu); wang344@mailbox.sc.edu (H. Wang)

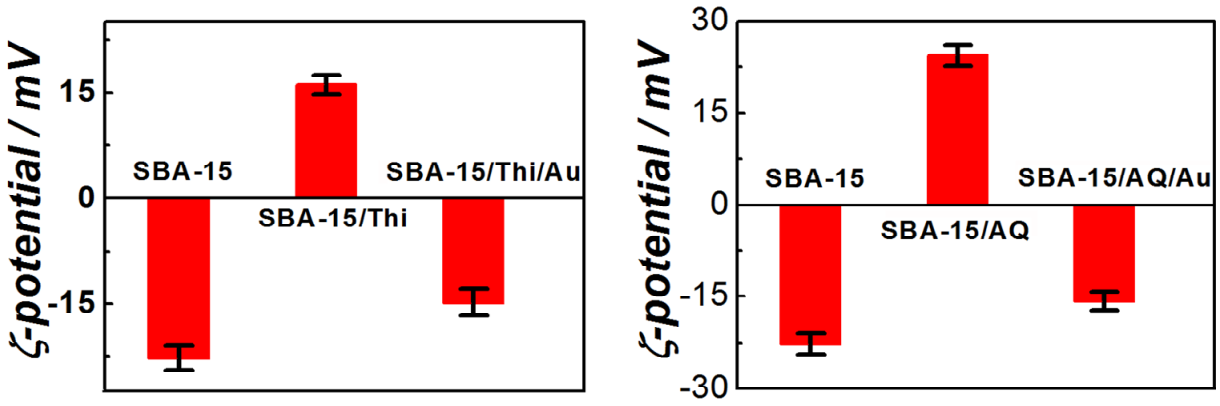

Fig. S1 Evolution of ζ-potentials during (*left panel*) the SBA-15/Thi/Au NPs and (*right panel*) SBA-15/AQ/Au NPs nanocomposite assembly processes.

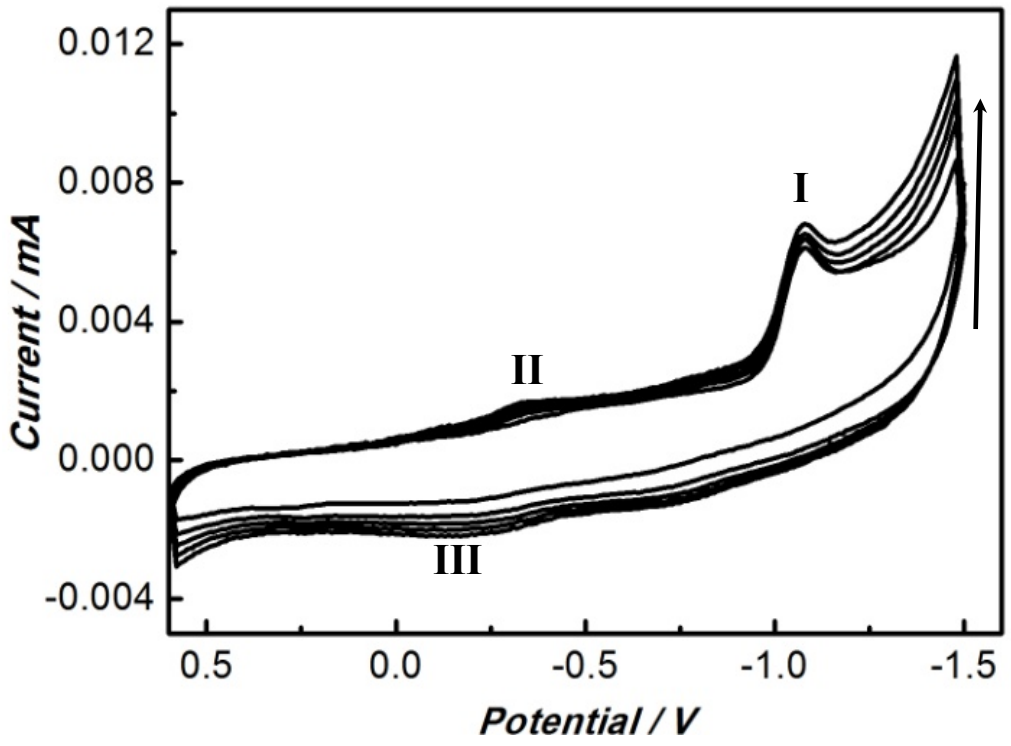

Fig. S2 Cyclic voltammograms for the electrolysis of 1.0 mg mL^{-1} GO in pH 9.0 carbonate buffer solution at a scan rate of 25 mV s^{-1}.

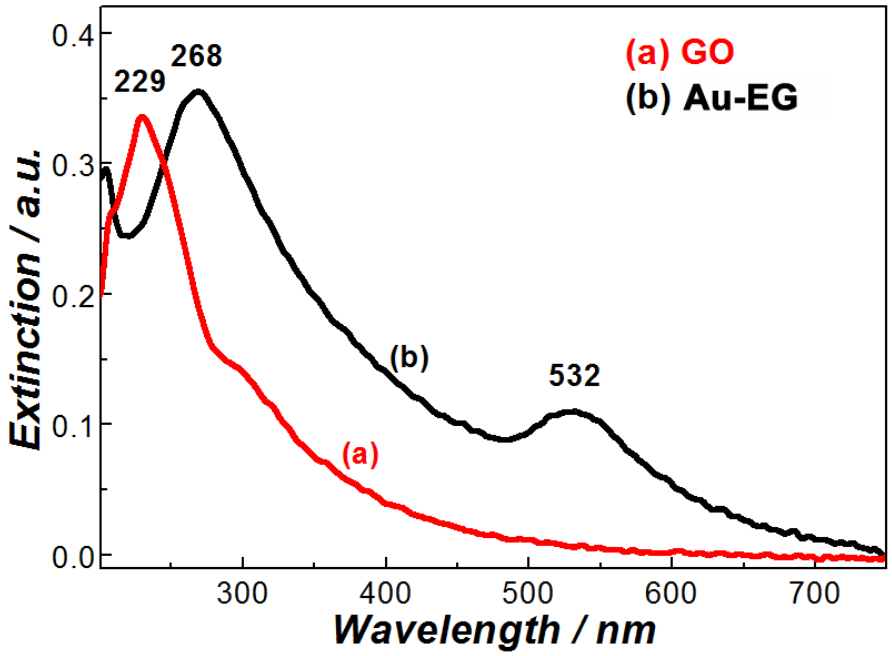

Fig. S3 UV-Vis extinction spectra of (a) GO and (b) Au-EG nanocomposite film.

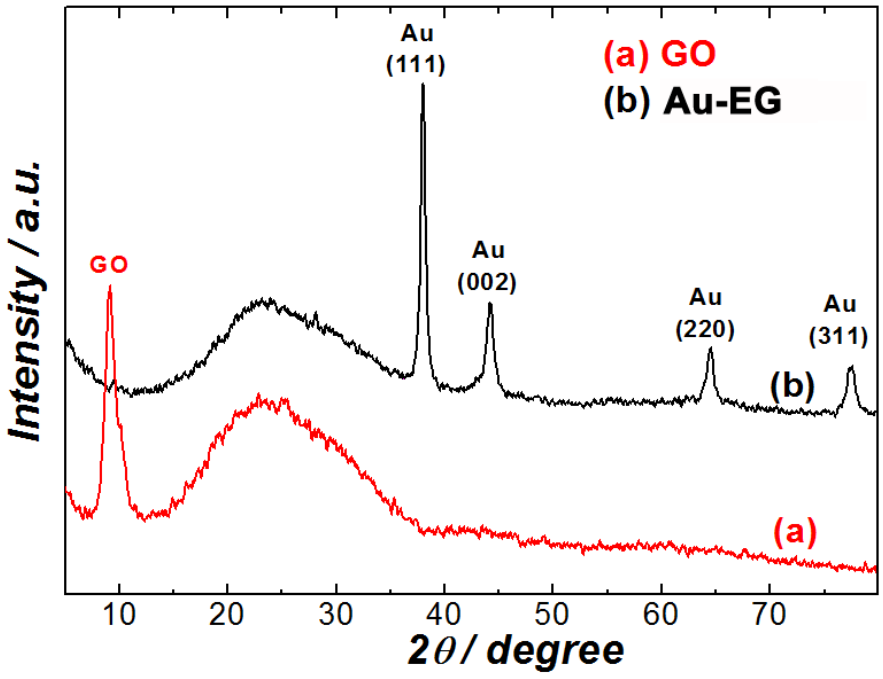

Fig. S4 Wide angle powder XRD patterns of (a) GO and (b) Au-EG nanocomposite film.

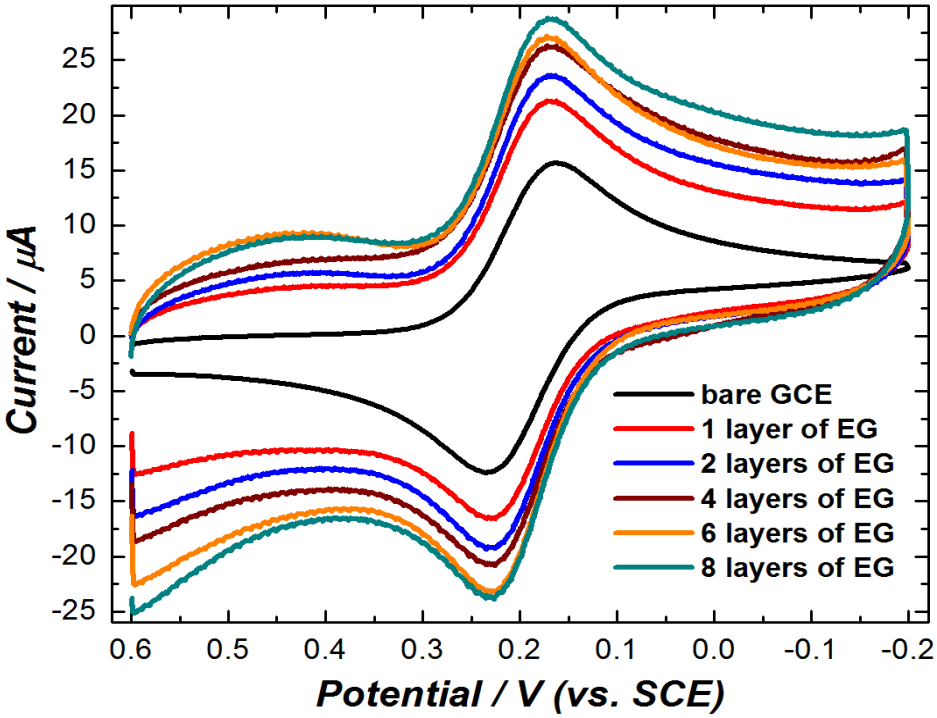

Fig. S5 Cyclic voltammograms for bare GCE, Au NPs-EG/GCE with various layers of EG in 10 mM $K_3Fe(CN)_6$ + 0.1 M KCl at a scan rate of 50 mV s^{-1}.

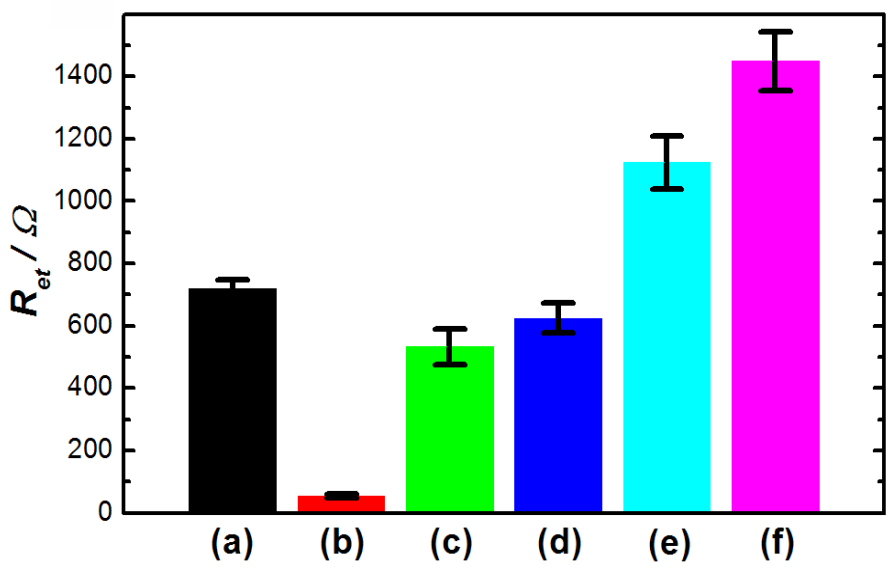

Fig. S6 Evolution of electron transfer resistance (R_{et}) during the stepwise cytosensor assembly process: (a) bare GCE, (b) Au NPs-EG/GCE, (c) aptamer/Au NPs-EG/GCE, (d) MCH/aptamer/Au NPs-EG/GCE, (e) cells/MCH/aptamer/Au NPs-EG/GCE, and (f) nanoprobe/cells/MCH/aptamer/Au NPs-EG/GCE. The standard deviations, which were shown as the error bars, were obtained from independent EIS measurements performed on three cytosensors.