

Electronic supplementary information

High performance system for protein assays: synergistic effect of terminal protection strategy and graphene oxide platform

Yue He* and Bining Jiao

* To whom correspondence should be addressed. Dr. Yue He, E-mail: yhe@swu.edu.cn, Tel: 86-23-68349603, Fax: 86-23-68349046

*Corresponding author:

Laboratory of Quality & Safety Risk Assessment for Citrus Products (Chongqing), Ministry of Agriculture, Citrus Research Institute, Southwest University, Chongqing, 400712, China; National Citrus Engineering Research Center, Chongqing, 400712, China.

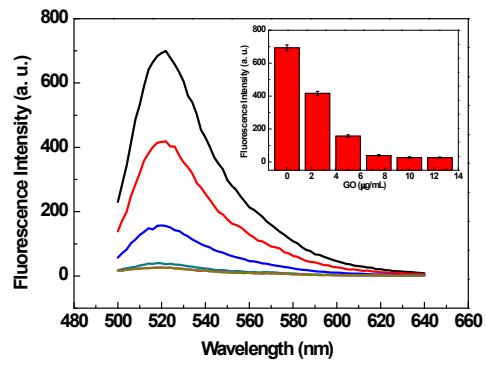


Figure S1 Fluorescence emission spectra of probe ssDNA (40 nM) upon the addition of different concentration of GO (0, 2.5, 5, 7.5, 10, and 12.5 $\mu\text{g/mL}$). Inset: fluorescence intensity versus concentration of GO. Excitation: 480 nm.

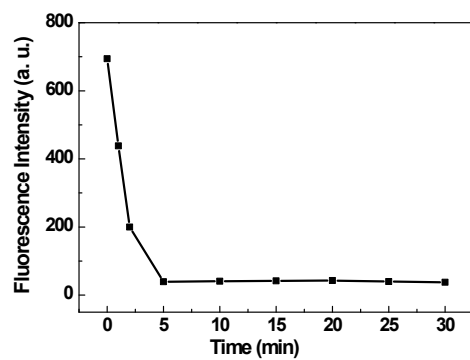


Figure S2 Fluorescence quenching of probe ssDNA (40 nM) in Tris-HCl buffer by GO as a function of time.

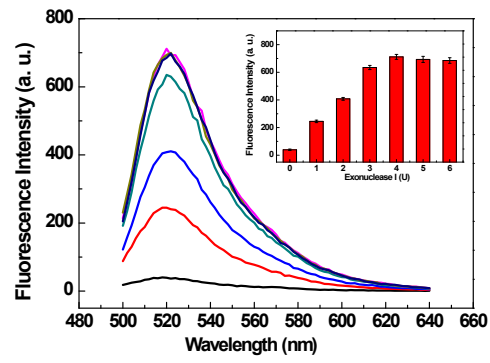


Figure S3 Fluorescence emission spectra of probe ssDNA upon the addition of different concentrations of Exo I (0, 1, 2, 3, 4, 5, and 6 U) in the sensing system. Excitation: 480 nm. Inset: fluorescence intensity versus concentration of Exo I. Concentration: probe ssDNA, 40 nM; GO, 7.5 $\mu\text{g}/\text{mL}$. Excitation: 480 nm.

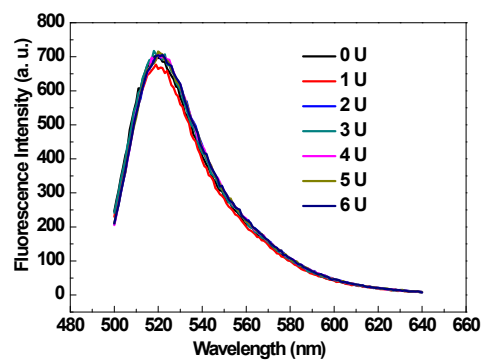


Figure S4 Fluorescence emission spectra of probe ssDNA (40 nM) upon the addition of different concentrations of Exo I (0, 1, 2, 3, 4, 5, and 6 U). Excitation: 480 nm. Excitation: 480 nm.

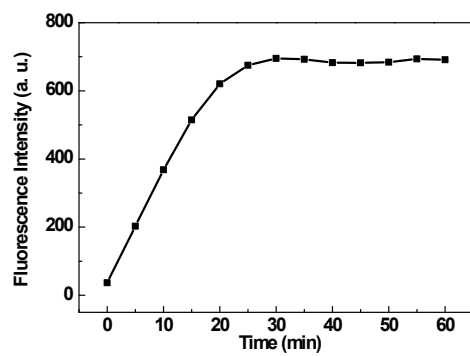


Figure S5 Fluorescence intensity of probe ssDNA upon the different reaction time with Exo I in the sensing system. Concentration: probe ssDNA, 40 nM; Exo I, 4 U; GO, 7.5 $\mu\text{g}/\text{mL}$. Excitation: 480 nm.

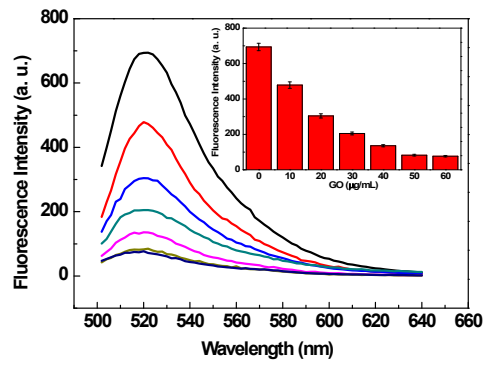


Figure S6 Fluorescence emission spectra of probe ssDNA (40 nM) upon the addition of different concentration of GO (0, 10, 20, 30, 40, 50, and 60 μg/mL) in 2% serum. Inset: fluorescence intensity versus concentration of GO in 2% serum. Excitation: 480 nm.

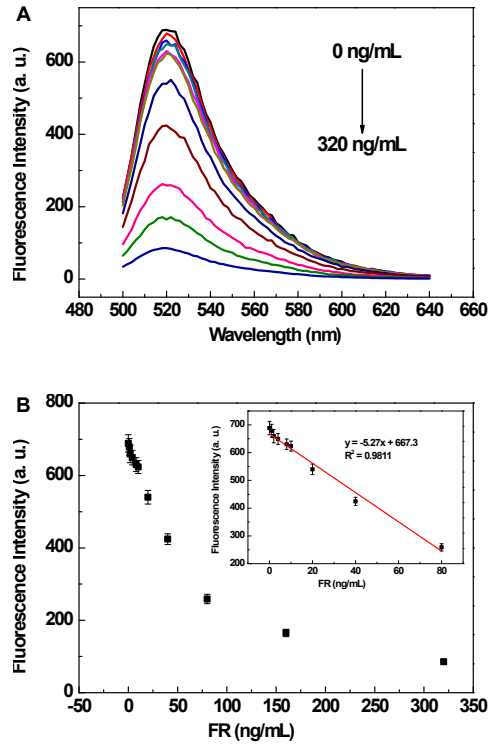


Figure S7 Fluorescence emission spectra of GO-based biosensor in the presence of increasing amount of FR (0, 1, 2, 4, 8, 10, 20, 40, 80, 160 and 320 ng/mL) and calibration curve for FR detection in 2% serum. (A) Fluorescence emission spectra of GO-based biosensor upon the addition of FR at different concentrations in 2% serum. (B) Calibration curve for FR detection in 2% serum. Excitation: 480 nm.