Graphene oxide supported gold nanoclusters for sensitive and selective detection of nitrite ions

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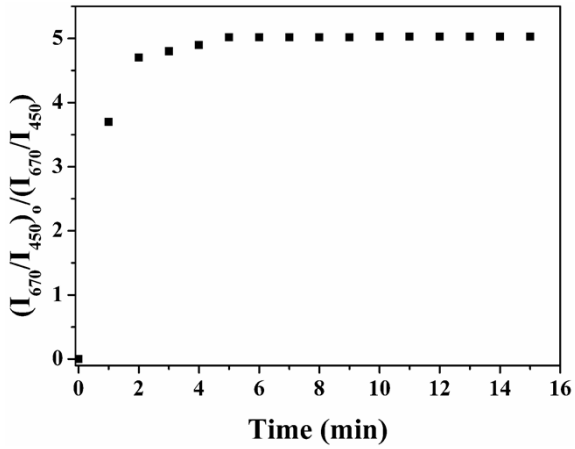

Figure S1. The fluorescence intensities ratios of the nanohybrid probe after adding 20 μM NO_2^- versus the consecutive illumination recorded every one minute in 15 minutes. The fluorescence spectra were recorded with excitation at 365 nm.

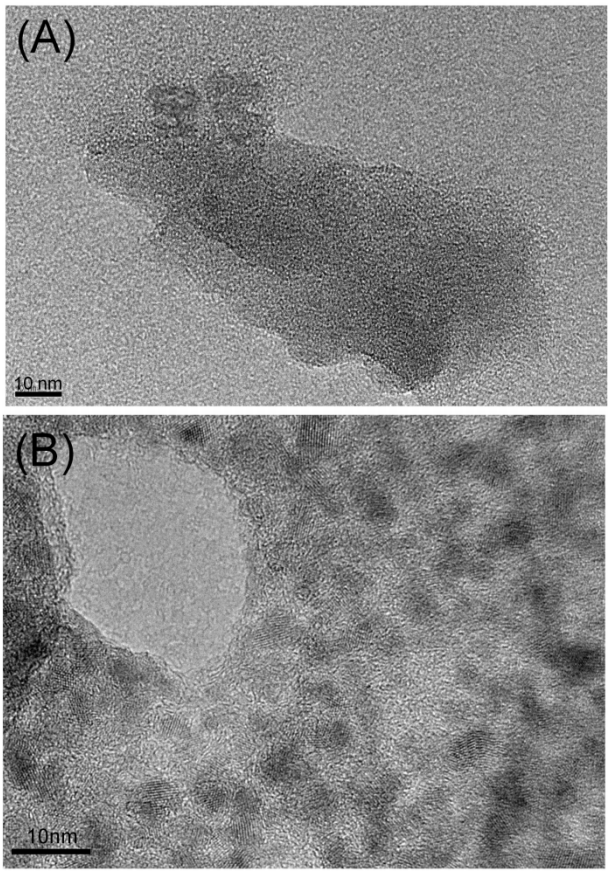

Figure S2. The TEM images of (A) graphene oxide and (B) the nanohybrid, indicating the Au nanoclusters loading on the graphene oxides.

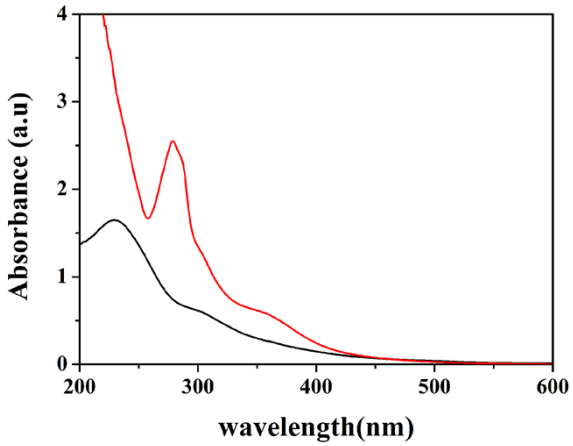

Figure S3. UV-vis absorption spectra of GO (black line) and GO-C_6NH_2 (red line)

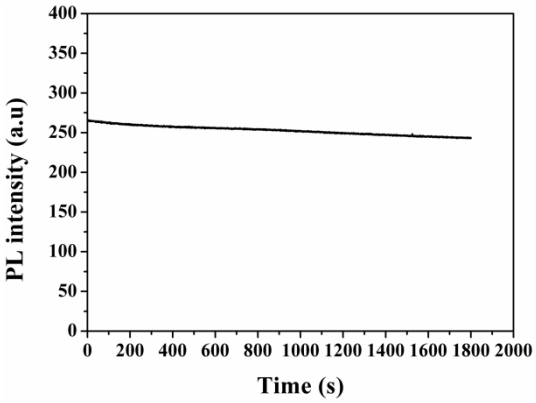

Figure S4. The photostability of GO-C_6NH_2 in water, the fluorescence intensity of GO-C_6NH_2 versus the consecutive illumination time under UV light within 30 minutes. The fluorescence spectra were recorded with excitation wavelength of 365 nm.

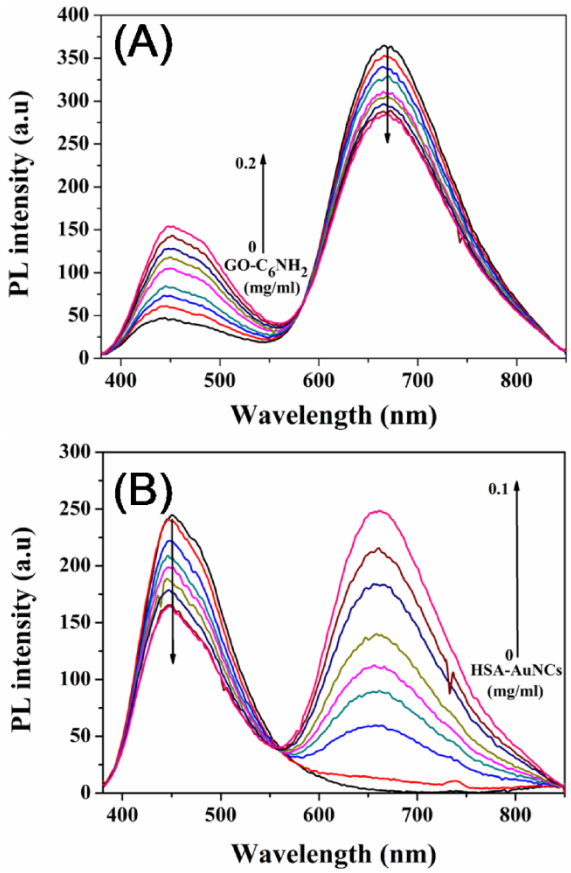

Figure S5. Fluorescence spectra of (A) the HSA-Au NCs (0.15 mg/mL) upon the addition of GO-C_6NH_2 and (B) the GO-C_6NH_2 (0.3 mg/mL) upon the addition of HSA-Au NCs. The fluorescence spectra were recorded with excitation at 365 nm.

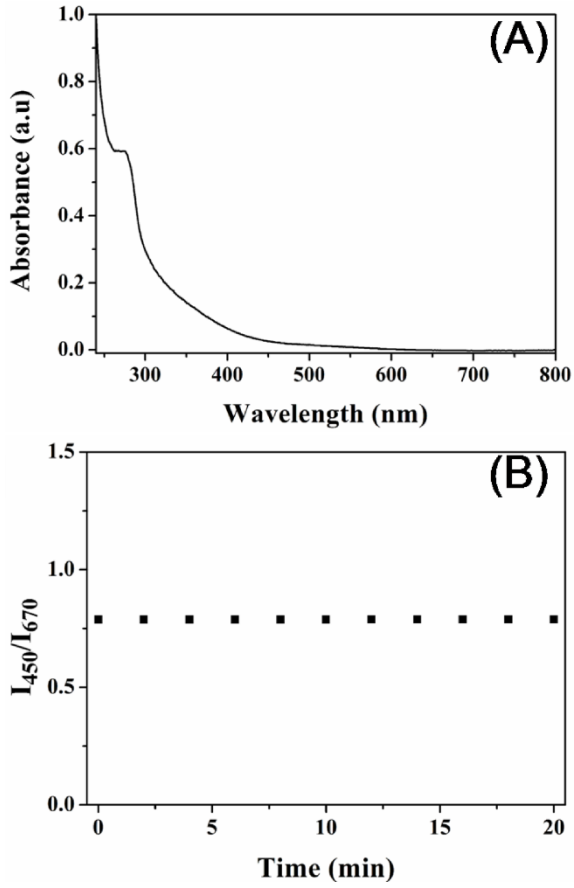

Figure S6. (A) UV-vis absorption spectra of the nanohybrid probe and (B) the fluorescence intensities ratios (I_{450}/I_{670}) of the nanohybrid probe versus the consecutive illumination recorded every two minutes in twenty minutes. The fluorescence spectra were recorded with excitation at 365 nm.

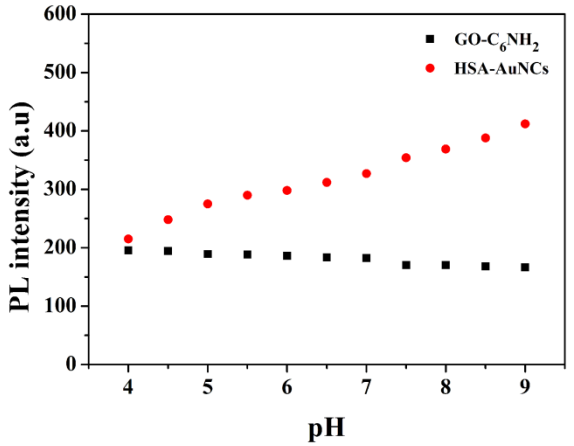

Figure S7. The dependence of fluorescence intensity of HSA-Au NCs and GO-C_6NH_2 on pH in the range from 4 to 9.

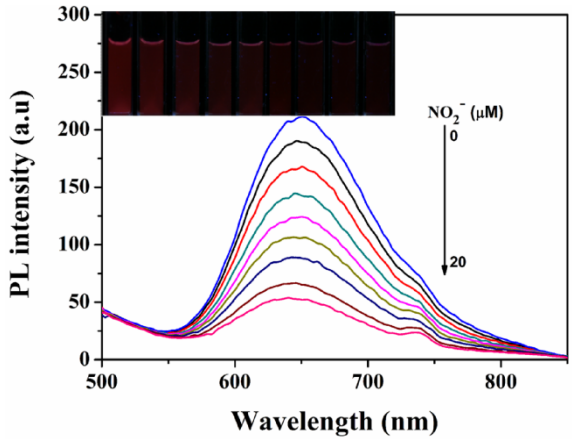

Figure S8. The pure red HSA-Au NCs upon the exposure to different concentrations of NO_2^-. The concentrations of from left to right are 0, 2.5, 5, 7.5, 10, 12.5, 15, 17.5, and 20 μM, respectively. The fluorescence photos were taken under a UV lamp (excitation wavelength at 365 nm).

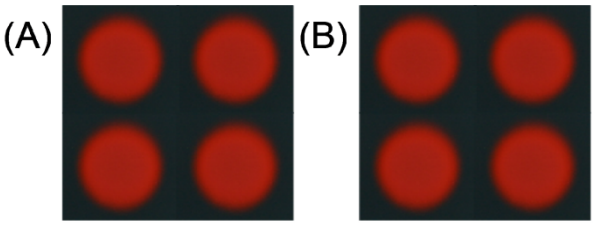

Figure S9. Fluorescence images of the indicating paper immobilized with the nanohybrid probe after storage at 4 ºC in the dark for one day (A) and one month (B). The images were taken under a UV lamp. No color and sensitivity degradation were observed.