

Hydrogen peroxide sensitive hemoglobin-capped gold nanoclusters as a turn-on fluorescent sensor for the label-free detection of glucose

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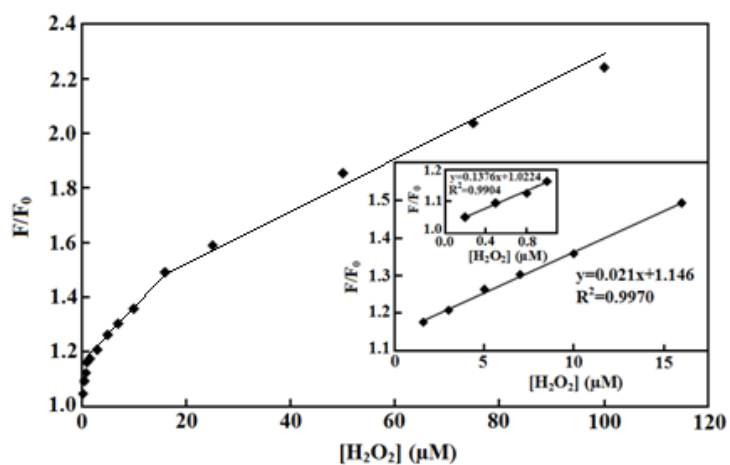


Fig. S1. Plot of fluorescence ratio (F/F_0) of the fluorescent Hb-AuNCs probe at 450 nm for different concentrations of H_2O_2 at 67 °C. Inset shows the two linear graphs from 0.2 to 1.0 μM ($R^2=0.990$) and from 1.6 to 16 μM ($R^2=0.997$) with a detection limit 0.04 μM ; $[Hb-AuNCs] = 2.2 \mu M$.

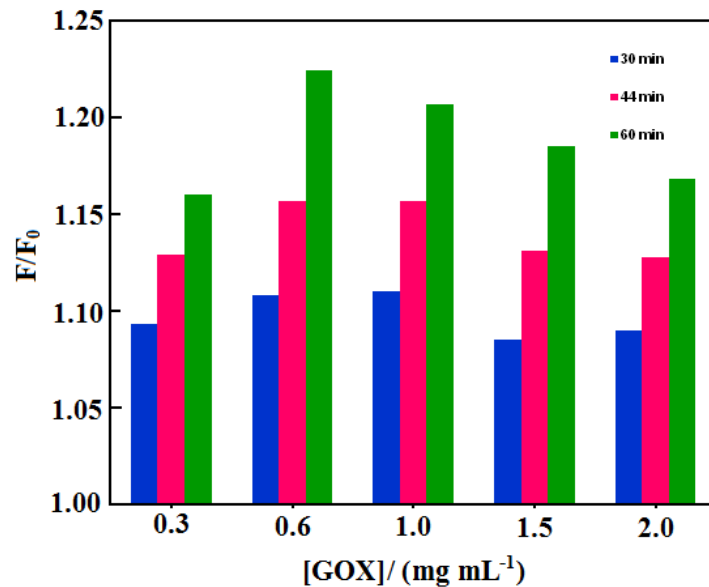


Fig. S2. Effect of concentration of GOx at different incubation time on the fluorescence enhancement of Hb-AuNCs in the presence glucose at 450 nm ($\lambda_{\text{ex}}=365$ nm) in 10 mM PBS buffered to pH 7.4; [glucose] = 1 mM and [Hb-Au NCs] = 2.2 μM .

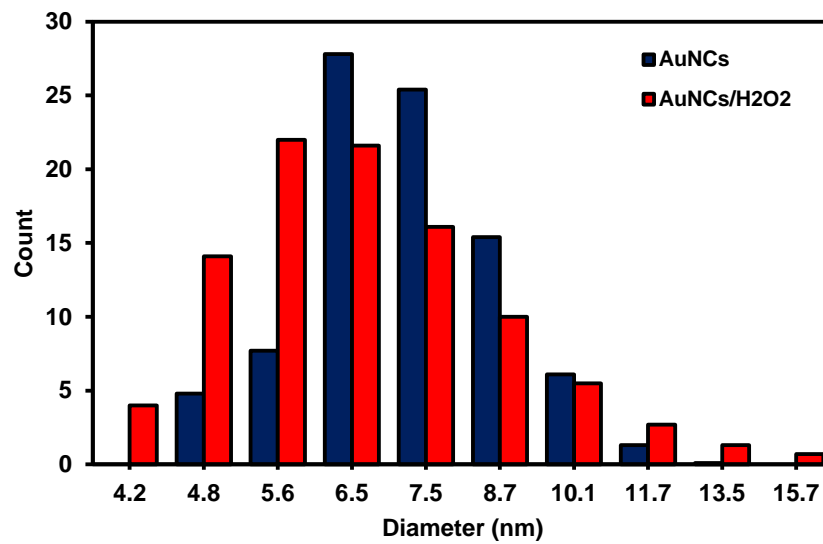


Figure S3. Histograms of particle-size distribution for the gold nanoclusters in the absence (blue) and presence of 1 mM H₂O₂ (red).

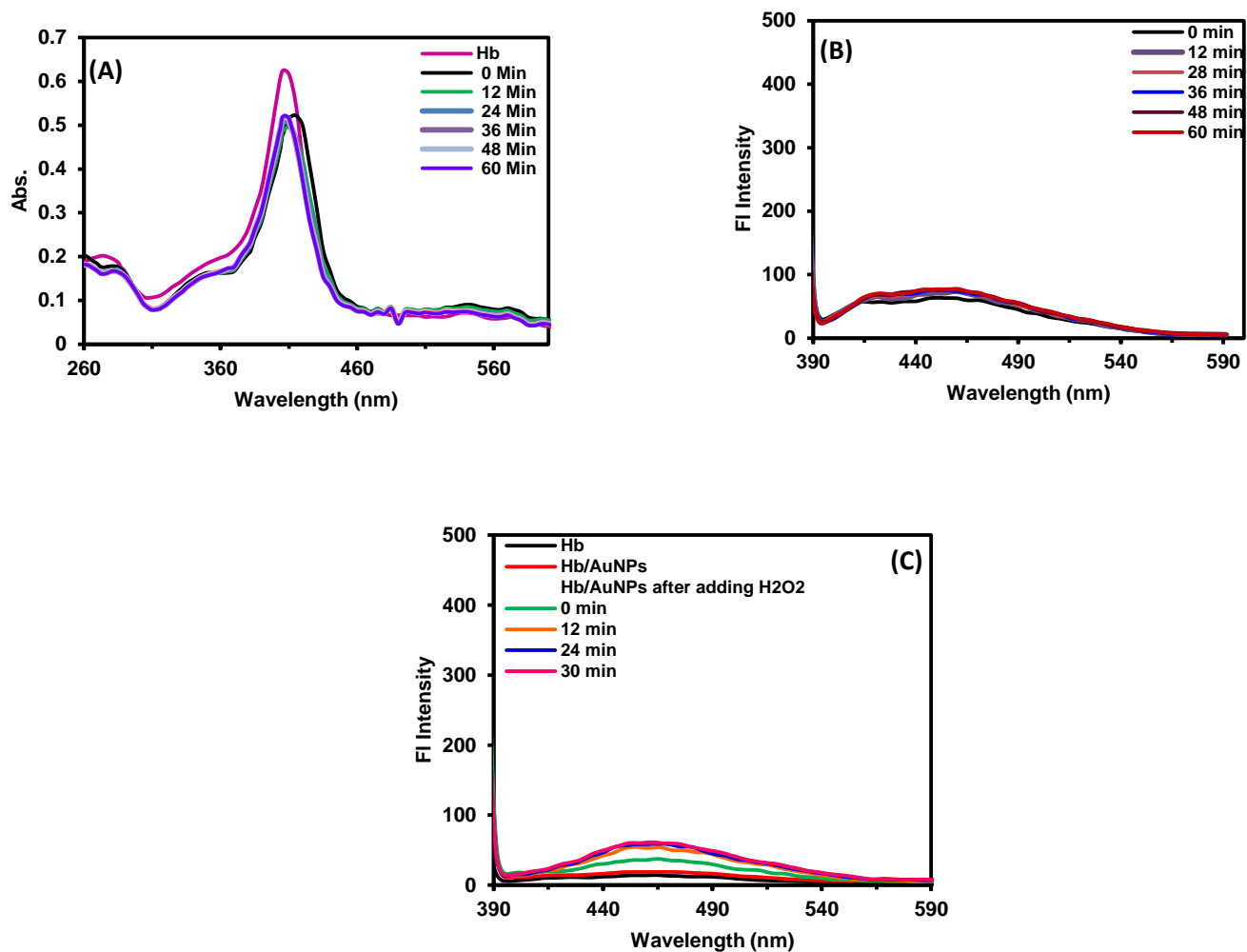


Fig. S4. (A) Absorption and (B) fluorescence spectral changes ($\lambda_{\text{ex}} = 365 \text{ nm}$) of Hb upon addition of H_2O_2 as a function of irradiation time (C) The fluorescence spectra of Hb in the presence of AuNPs ($\sim 10 \text{ nm}$) and in the presence of both AuNPs and H_2O_2 ; $[\text{H}_2\text{O}_2] = 1 \text{ mM}$ and $[\text{Hb}] = 2.2 \mu\text{M}$.