

Selective determination of Ag^+ in the presence of Cd^{2+} , Hg^{2+} and Cu^{2+} based on their different interactions with gold nanoclusters

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1 Characterization of the AuNCs

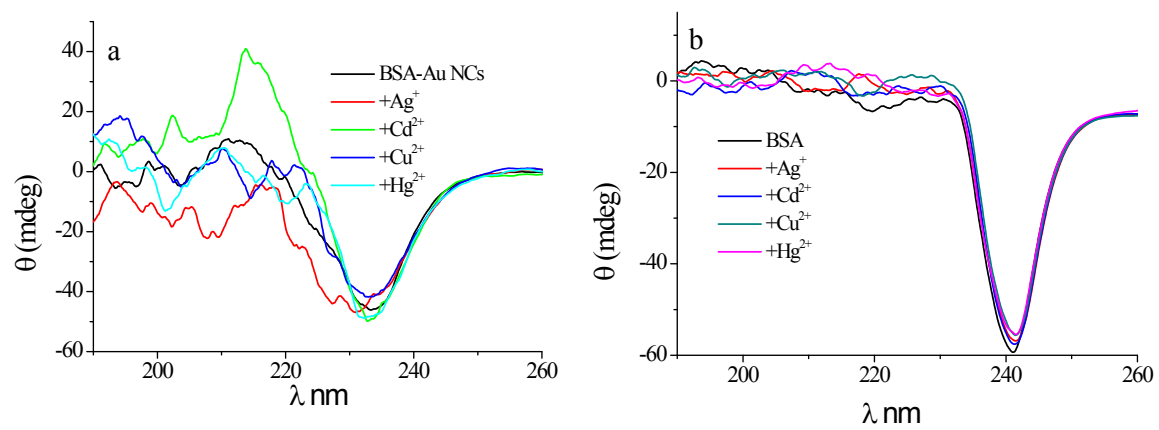


Fig.S1 CD spectra of AuNCs (a) and BSA (b).

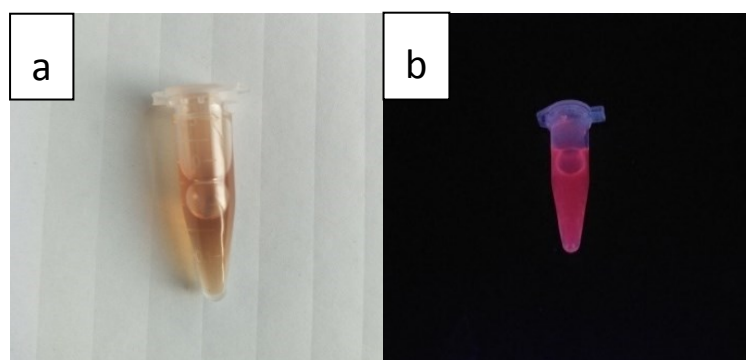


Fig.S2 The AuNCs is illuminated by fluorescent lamp (a) and ultraviolet lamp (b).

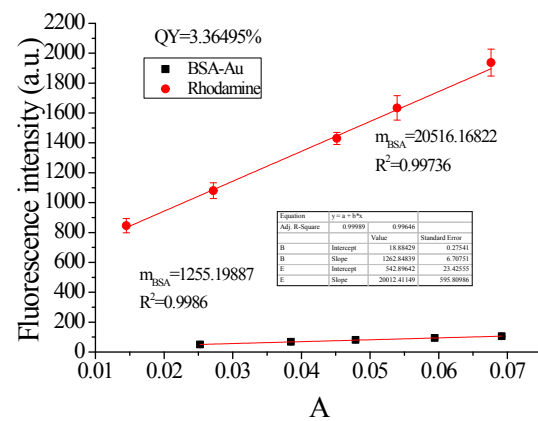


Fig.S3 Fluorescence quantum yield of AuNCs.

2 Optimization of assay conditions

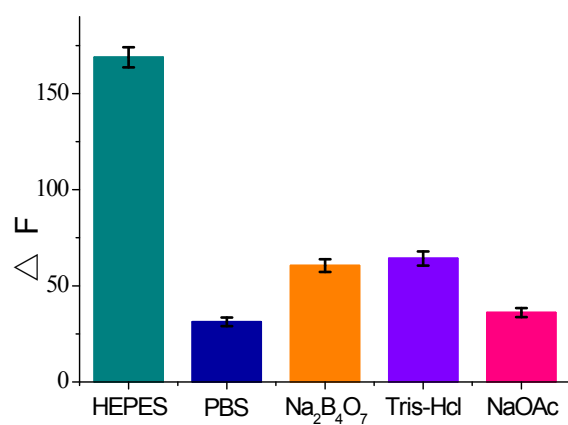


Fig.S4 The effect of buffer composition on the fluorescence of AuNCs.

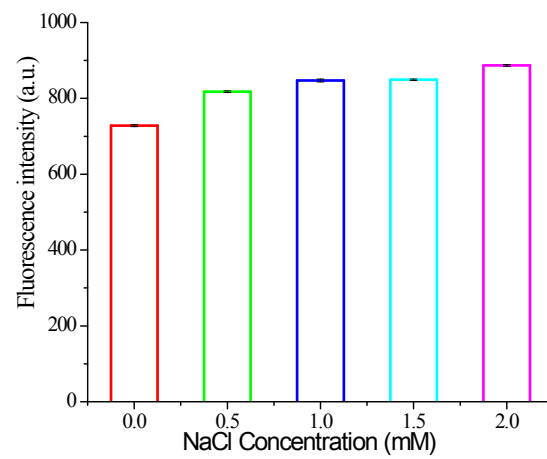


Fig.S5 Effect of ionic strength on AuNCs.

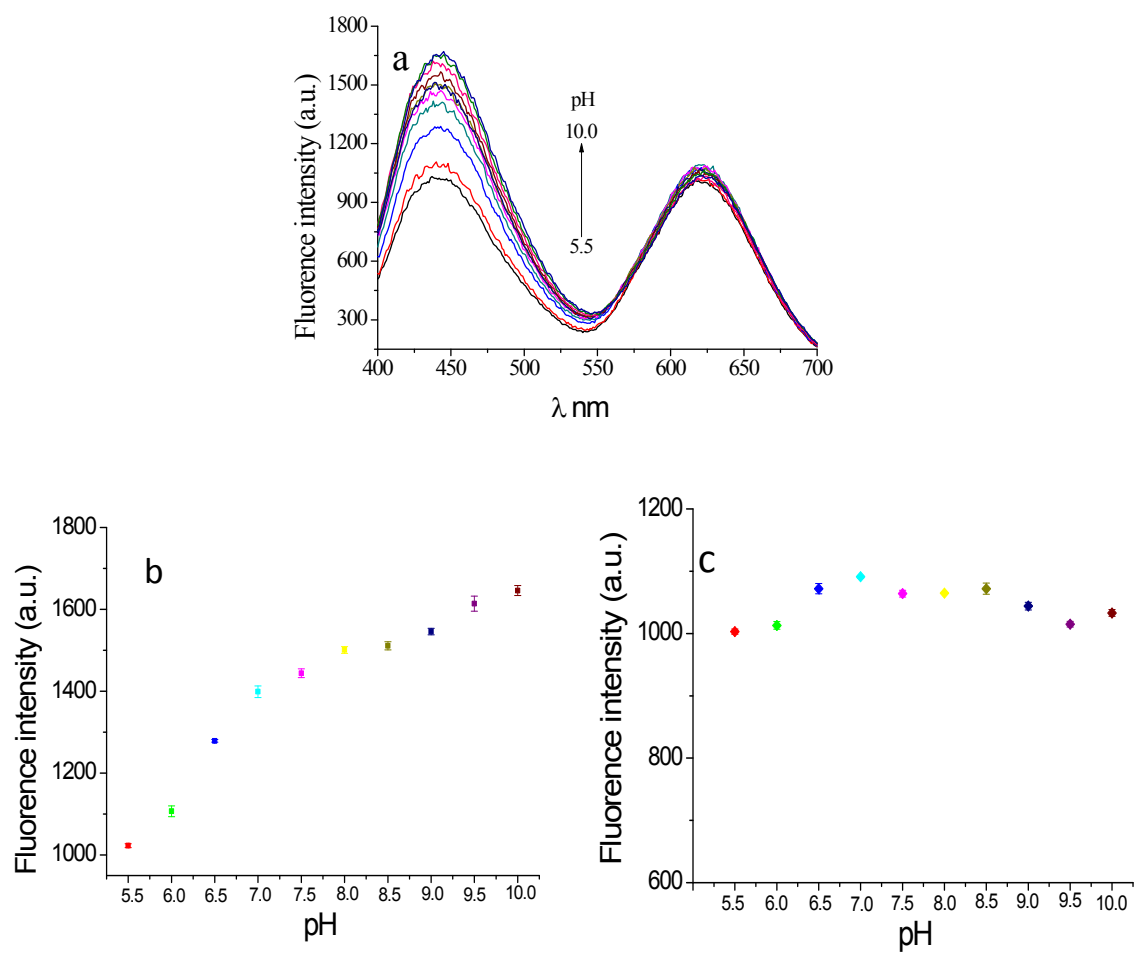


Fig.S6 The effect of pH (a), ($\text{Em} = 450$ nm (b), $\text{Em} = 630$ nm (c)) on the fluorescence of AuNCs.

3 Fluorescence lifetime detection

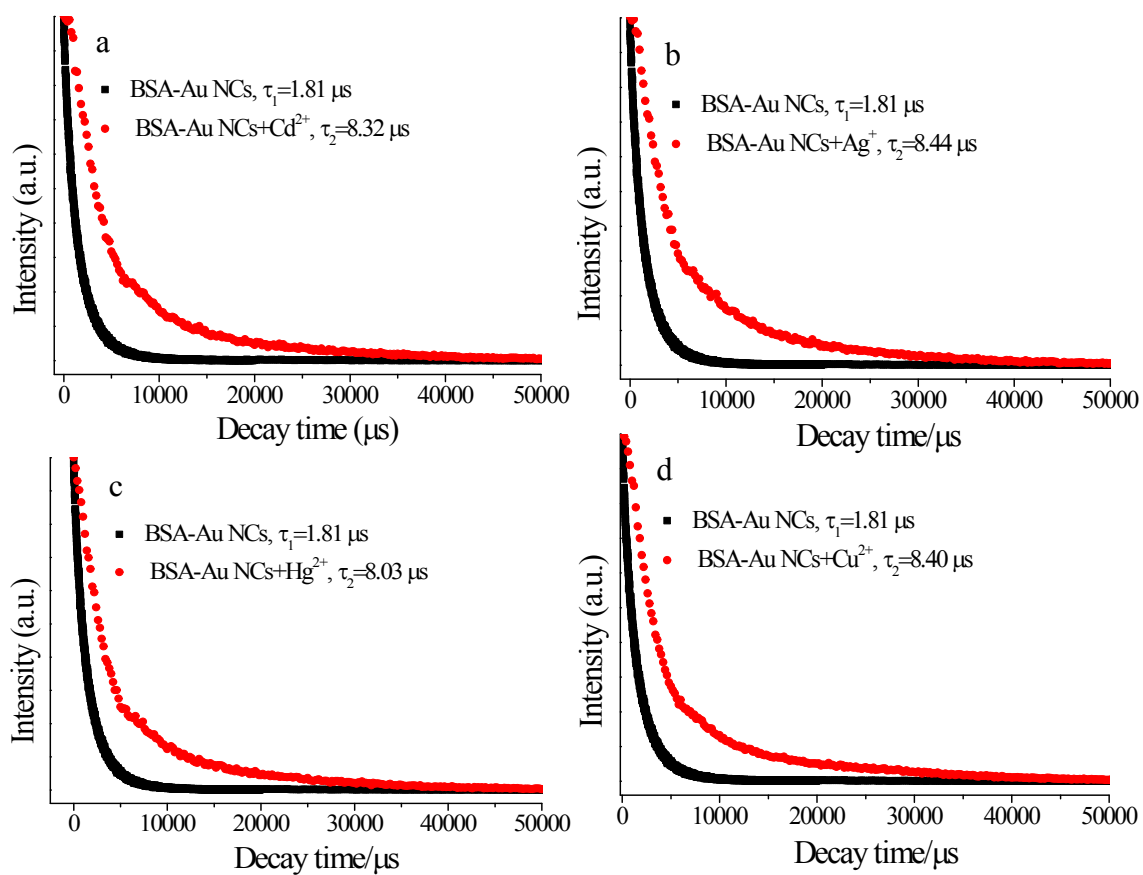


Fig.S7 BSA-AuNCs and the addition of Cd^{2+} (a), Ag^+ (b), Hg^{2+} (c), Cu^{2+} (d) fluorescence lifetime spectra ($\text{Em}=630 \text{ nm}$).

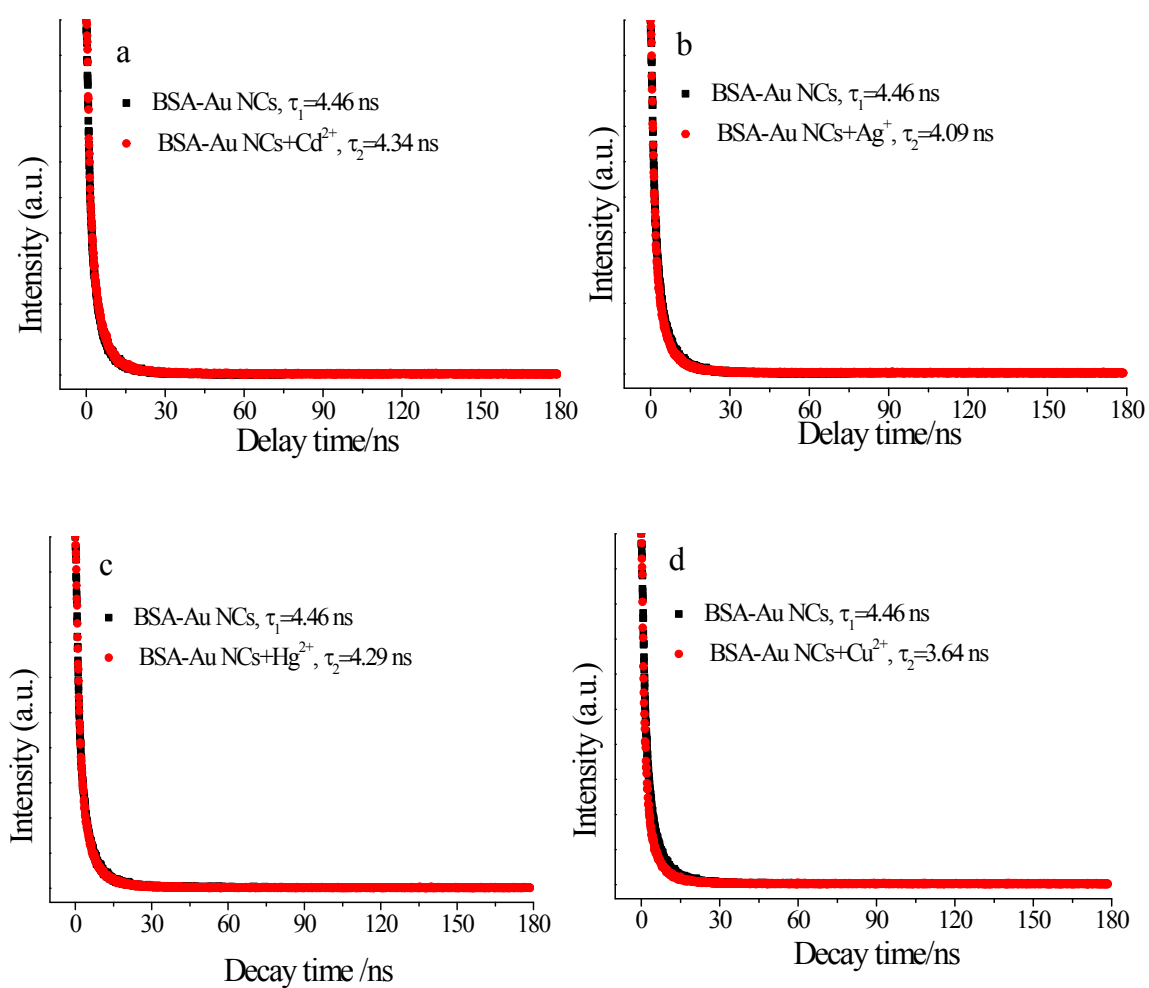


Fig.S8 BSA-AuNCs and the addition of Cd^{2+} (a), Ag^+ (b), Hg^{2+} (c), Cu^{2+} (d) fluorescence lifetime spectra (Ex = 570 nm).

4 Sensitivity for Cd^{2+} , Hg^{2+} , and Cu^{2+} detection

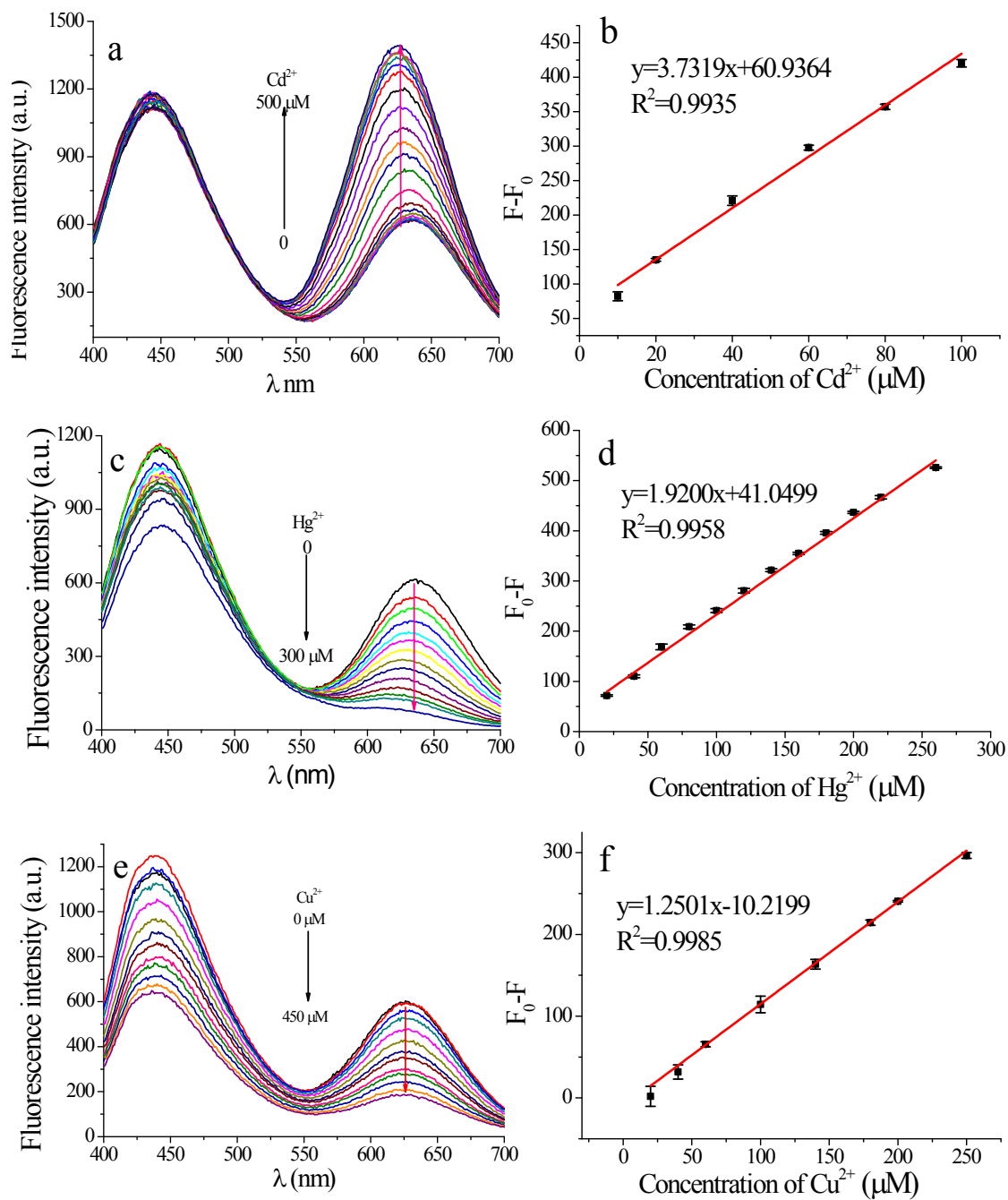


Fig.S9 Fluorescence spectra of AuNCs with the increase of Cd^{2+} (a), Hg^{2+} (c), and Cu^{2+} (e) concentration and the linear response of fluorescence intensity of AuNCs at 630 nm to Cd^{2+} (b), Hg^{2+} (d), and Cu^{2+} (f) concentration.