Protein-directed synthesis of pH-responsive red fluorescent copper nanoclusters and applications in cellular imaging and catalysts

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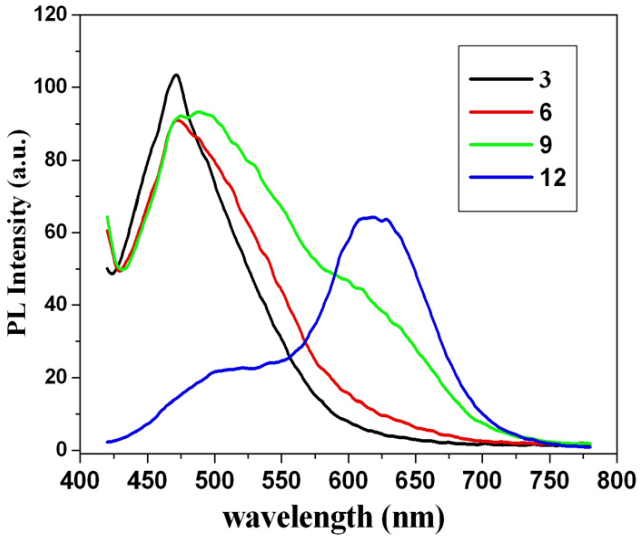

Fig. S1 The fluorescence spectra of resultant BSA-Cu NCs under different pH of reaction solution

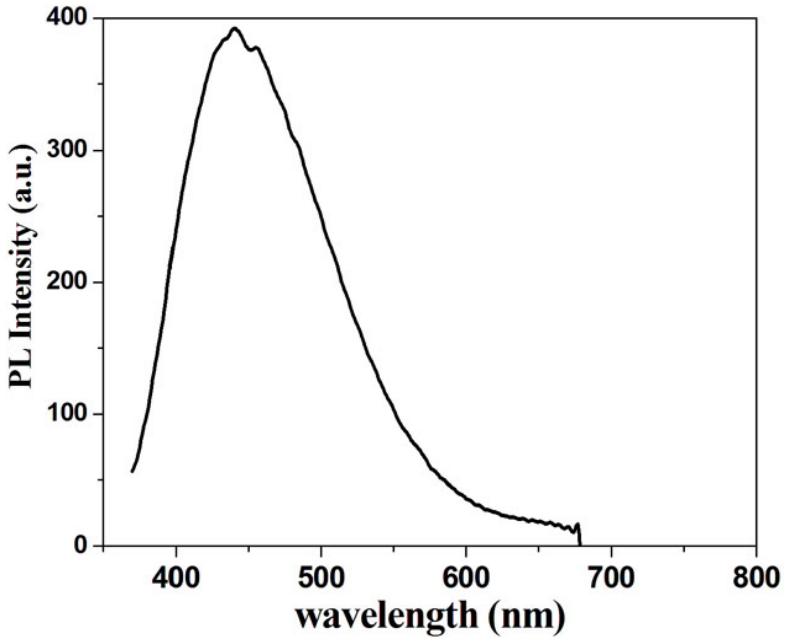

Fig S2 The PL spectrum of BSA without copper source

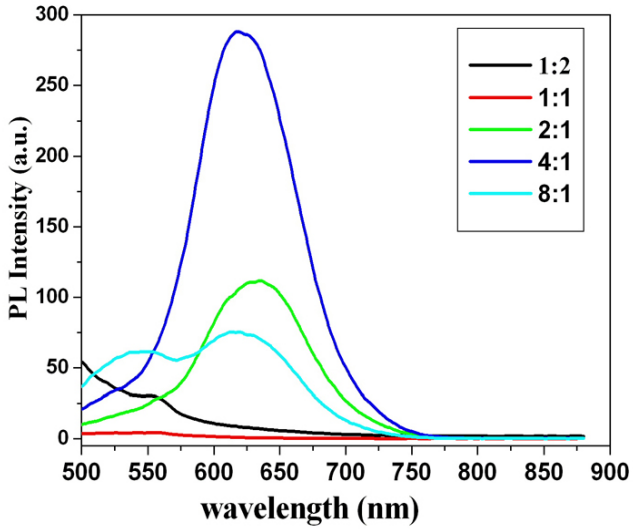

Fig. S3 The fluorescence spectra of resultant BSA-Cu NCs under different the molar ratio of BSA and Cu ions

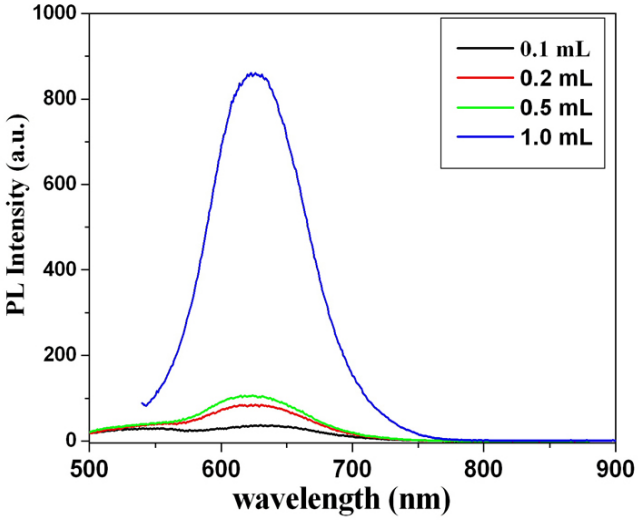

Fig. S4 The fluorescence spectra of resultant BSA-Cu NCs under different the amount of $N_2H_4.2H_2O$

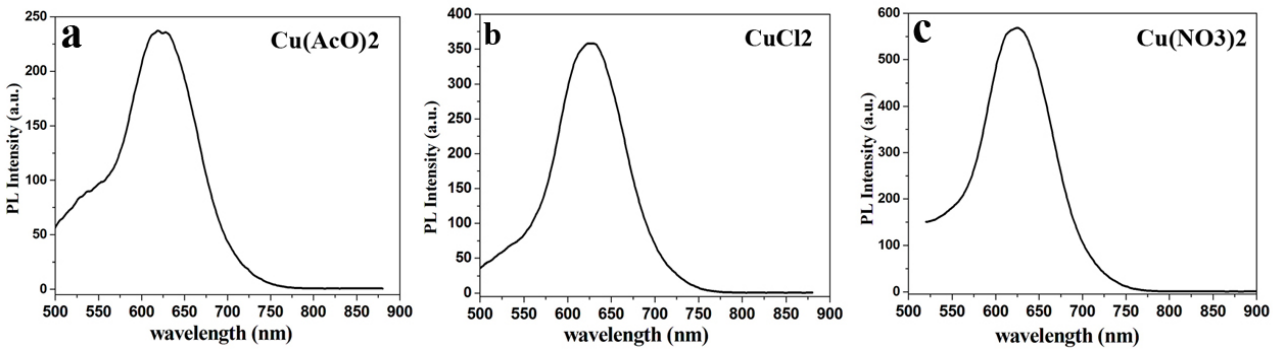

Fig. S5 The fluorescence spectra of resultant BSA-Cu NCs under different the Cu source including $Cu(AcO)_2$, $CuCl_2$, and $Cu(NO_3)_2$

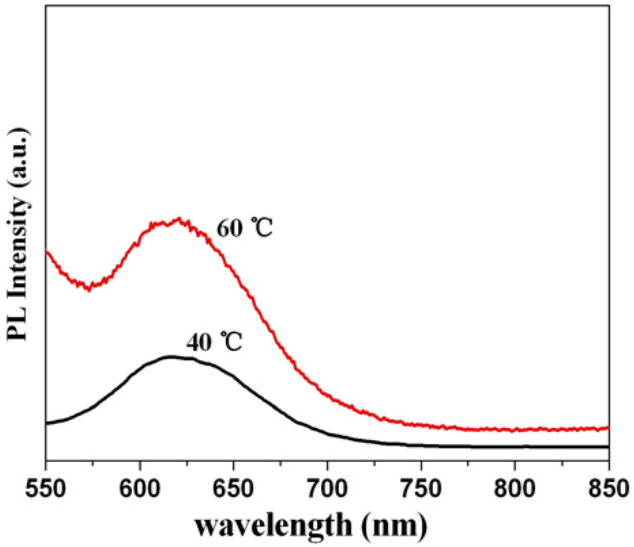

Fig. S6 The fluorescence spectra of resultant BSA-Cu NCs under different the reaction temperature

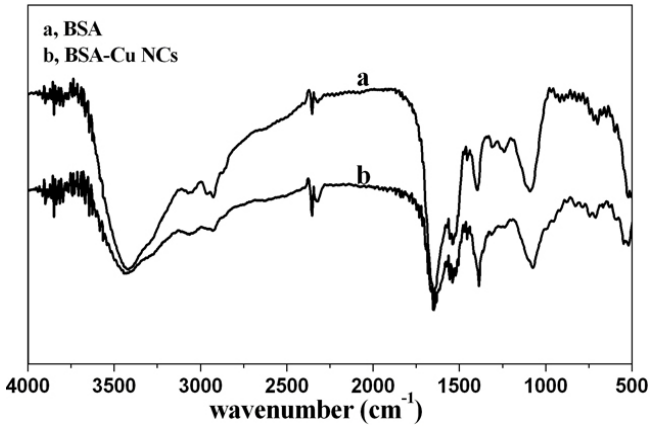

Fig. S7 The FITR spectra of the free BSA and BSA-Cu NCs bioconjugates.

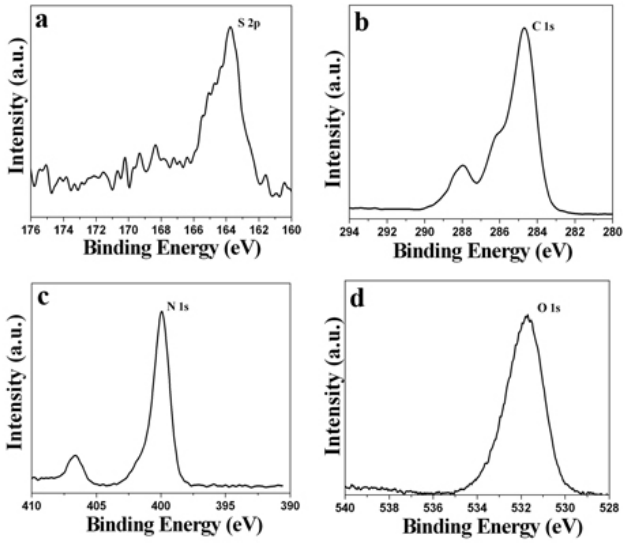

Fig. S8. The XPS spectra of the binding energy of S 2p, C 1s, N 1s, and O 1s

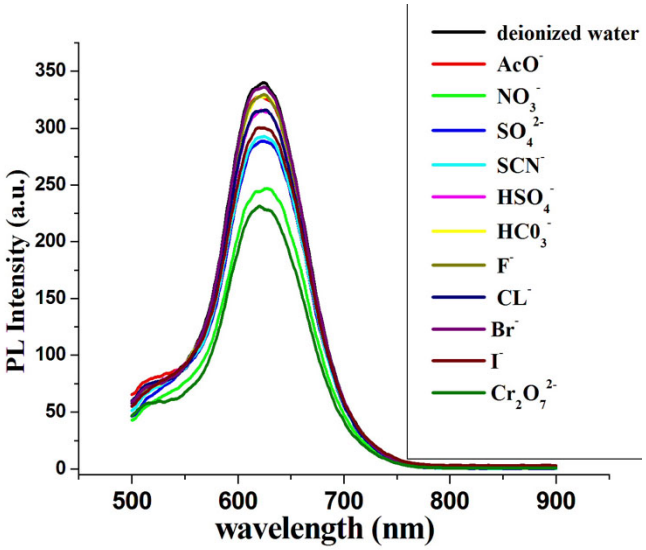

Fig. S9 The fluorescence spectra of BSA-Cu NCs in various common anions in detail

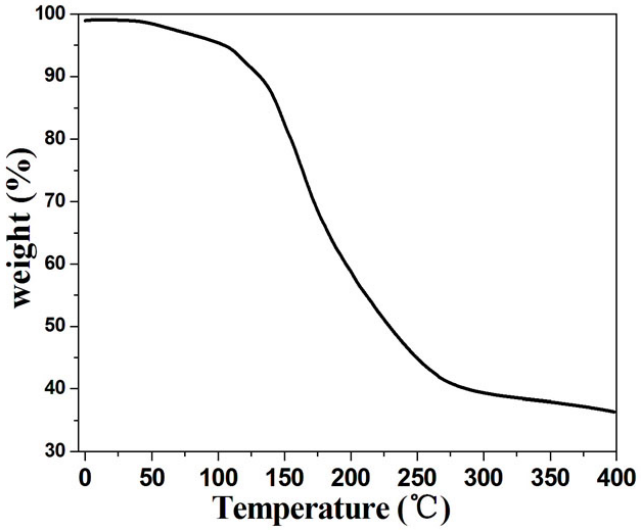

Fig. S10. Thermal gravimetric analysis of as-prepared BSA-Cu NCs