

## Electronic Supplementary Information

*for*

### **A dual-mode signaling responses of AuNPs-fluorescein based probe for specific detection of thiourea**

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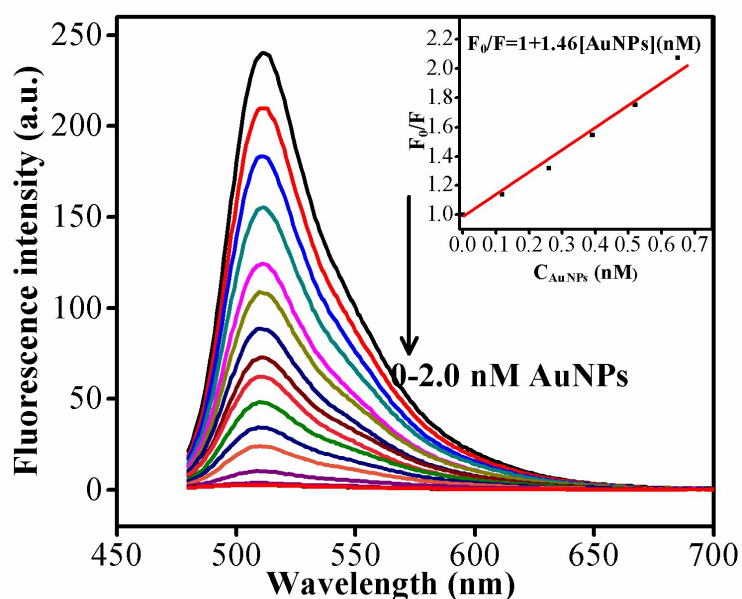
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**Table S1** Zeta potential measurement at pH 7.0

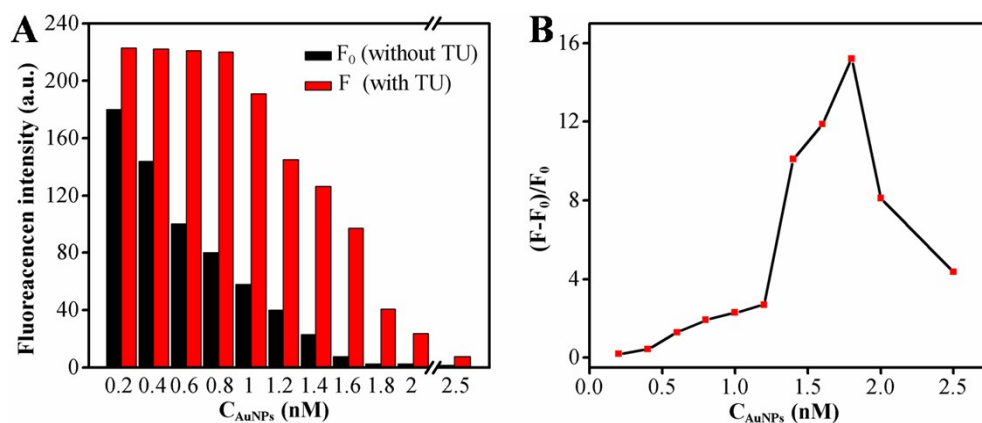
	Fluorescein	AuNPs	AuNPs+thiourea
Zeta potential (mV)	1.89 mV	-14.10 mV	-4.39 mV



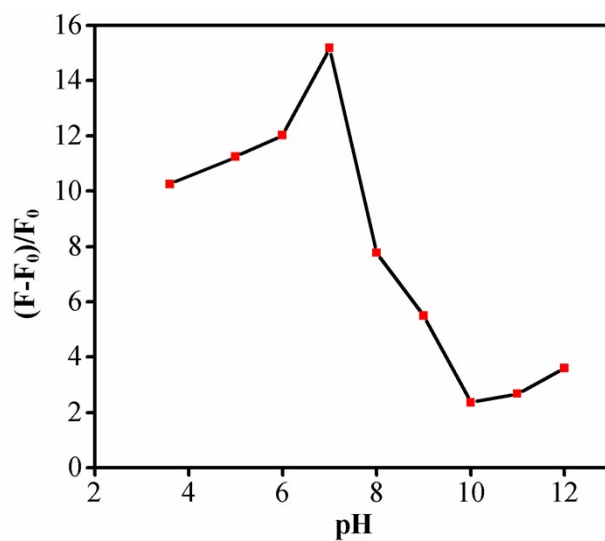
**Fig. S1.** Fluorescence emission spectra of fluorescein with successive concentrations of AuNPs (Arrow direction: 0, 0.13, 0.26, 0.39, 0.52, 0.65, 0.78, 0.91, 1.04, 1.17, 1.30, 1.43, 1.56, 1.69, 1.82, 2.0 nM). Insert was the corresponding relationship between  $F_0/F$  and AuNPs concentration in the range of 0-0.65 nM.

**Table S2** Quenching constants of different FRET systems

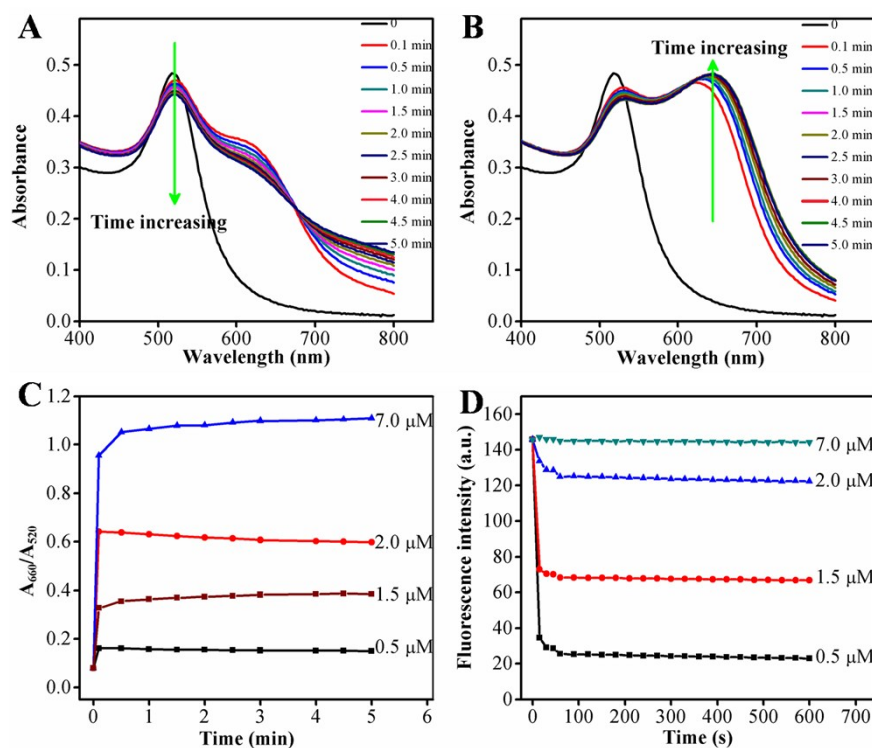
Systems	Quenching constant ( $L \cdot nmol^{-1}$ )	Reference
Fluorescein-AuNPs	1.46	This work
MPBA-AuNPs	0.8	1
CDs-AuNPs	0.535	2
CdTe@SiO <sub>2</sub> - AuNPs	2.43	3
CdTe QDs-AuNPs	5.8	4
RB-AuNPs	4.74	5



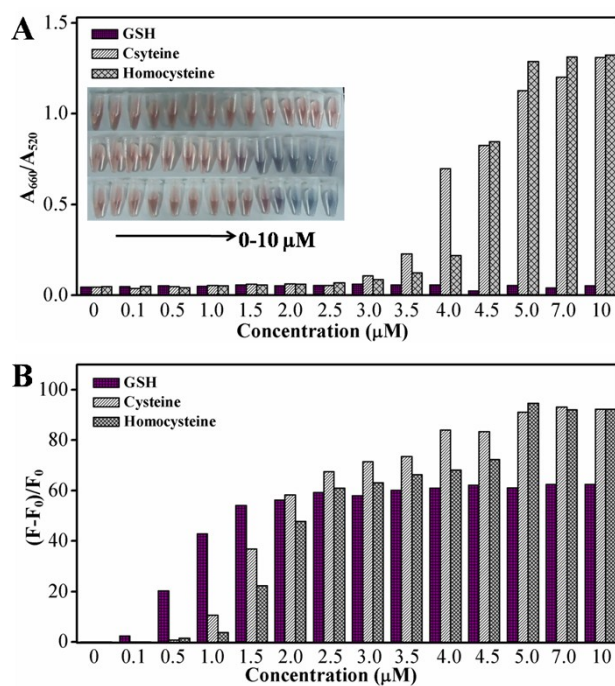
**Fig. S2.** (A) Fluorescence intensity of fluorescein with (F) and without thiourea ( $F_0$ ) in the presence of a series concentrations of AuNPs. (B) Fluorescence enhancement efficiency  $(F-F_0)/F_0$  as a function of various AuNPs concentration.



**Fig. S3.** The  $(F-F_0)/F_0$  as a function of various pH values.



**Fig. S4.** (A) UV-vis spectra of the sensing system toward time (1.5  $\mu\text{M}$ ). (B) UV-vis spectra of the sensing system toward time (7.0  $\mu\text{M}$ ). (C) The  $A_{660}/A_{520}$  and (D)  $(F-F_0)/F_0$  against time in the presence of different concentrations of thiourea.



**Fig. S5.** (A) Colorimetric change and (B) fluorescence recovery of the sensing system in the presence of GSH, cysteine and homocysteine. Insert in A shows the photographs of the visual color change corresponding to 0-10  $\mu\text{M}$  GSH, cysteine and homocysteine.

## References

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