

Supporting Information

Label-free Fluorescence “Turn-on” Detection of SO₃²⁻ by Gold Nanoclusters: Integration in a Hydrogel Platform and Intracellular Detection

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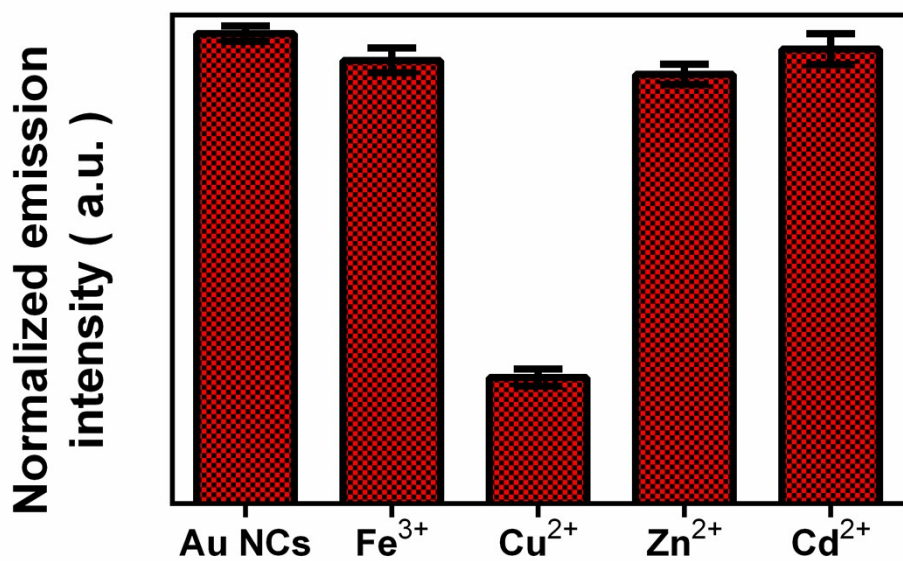


Fig. S1. Fluorescence response of Au NCs in the absence and presence of different metal ions (50 μ M) in aqueous solution.

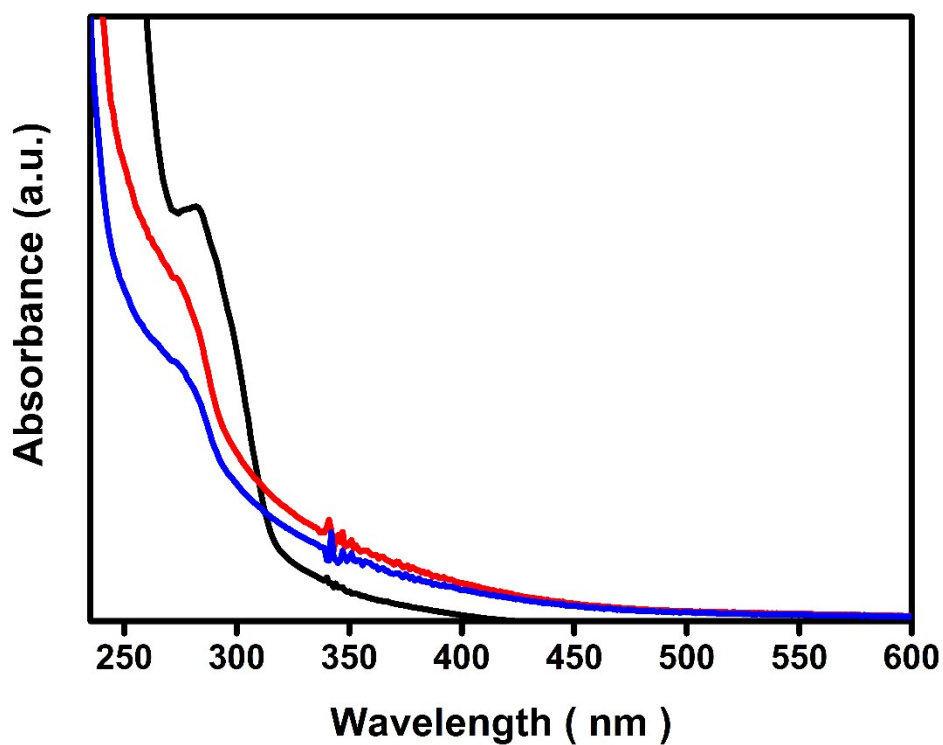


Fig. S2. UV-vis absorption spectra of Au NC (black), Au NC-Cu²⁺ (blue) and Au NC-Cu²⁺-SO₃²⁻ (red).

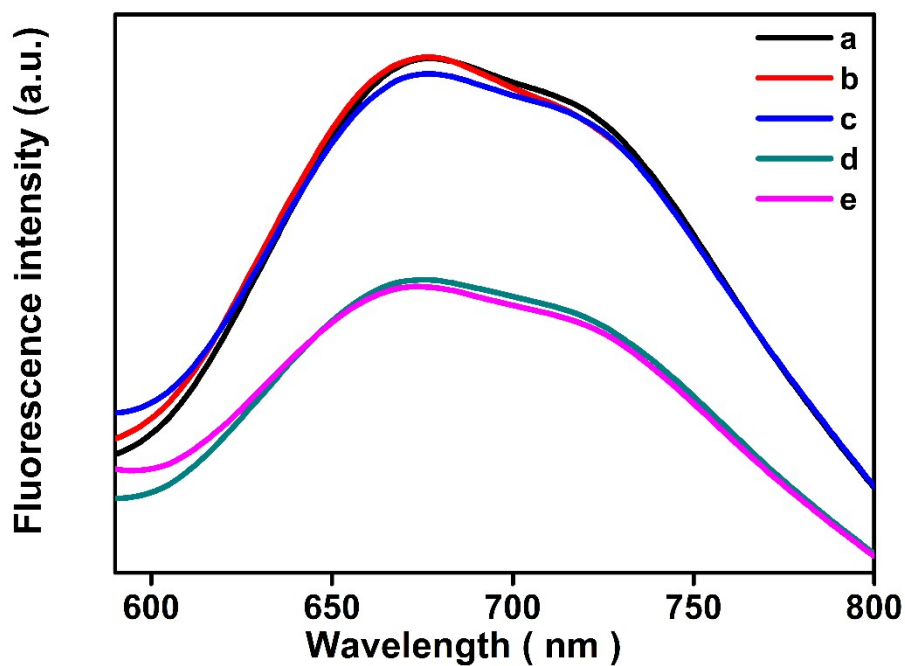


Fig. S3. Fluorescence spectra of (a) Au NCs following addition of (b) 100 μM SO_3^{2-} , (c) Mixture of 50 μM Cu^{2+} and 100 μM SO_3^{2-} , (d) 50 μM Cu^{2+} and (e) water addition (instead of SO_3^{2-} solution) to Cu^{2+} added Au NCs.

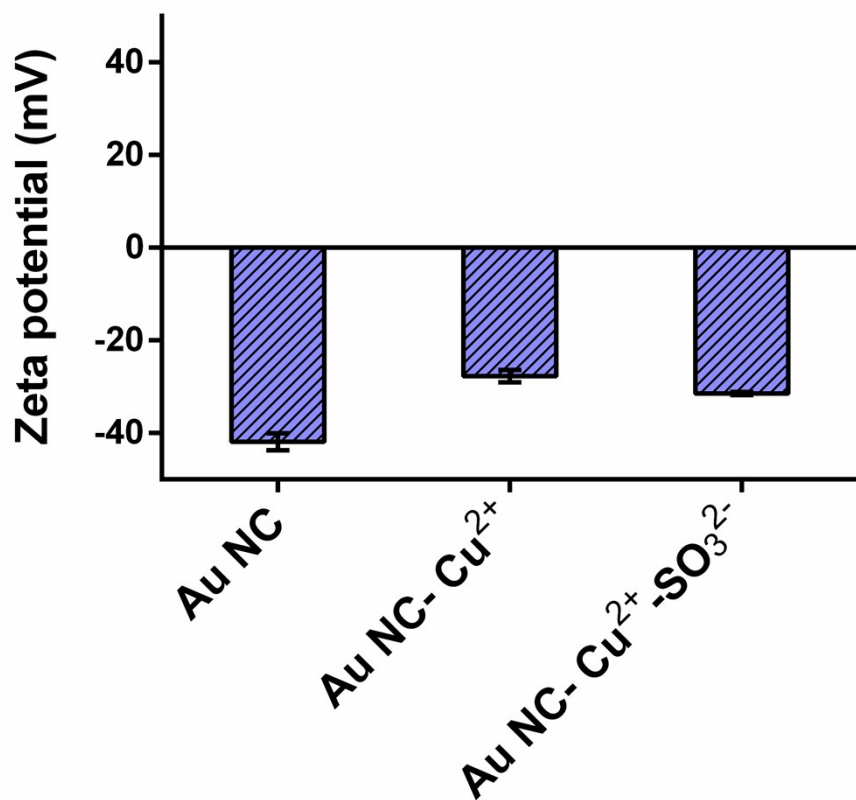


Fig. S4. Zeta potential measurements of the samples.

Sample	Added (μM)	Detected (μM) ¹ Mean \pm SD	Recovery (%)
1	20	21.4 ± 0.70	107
2	50	48.9 ± 1.08	97.8
3	80	77.2 ± 2.79	96.5
4	110	108.4 ± 1.26	98.5

¹ Mean \pm standard deviation for three replicate measurements.

Table S1. Determination of SO_3^{2-} in human urine samples.

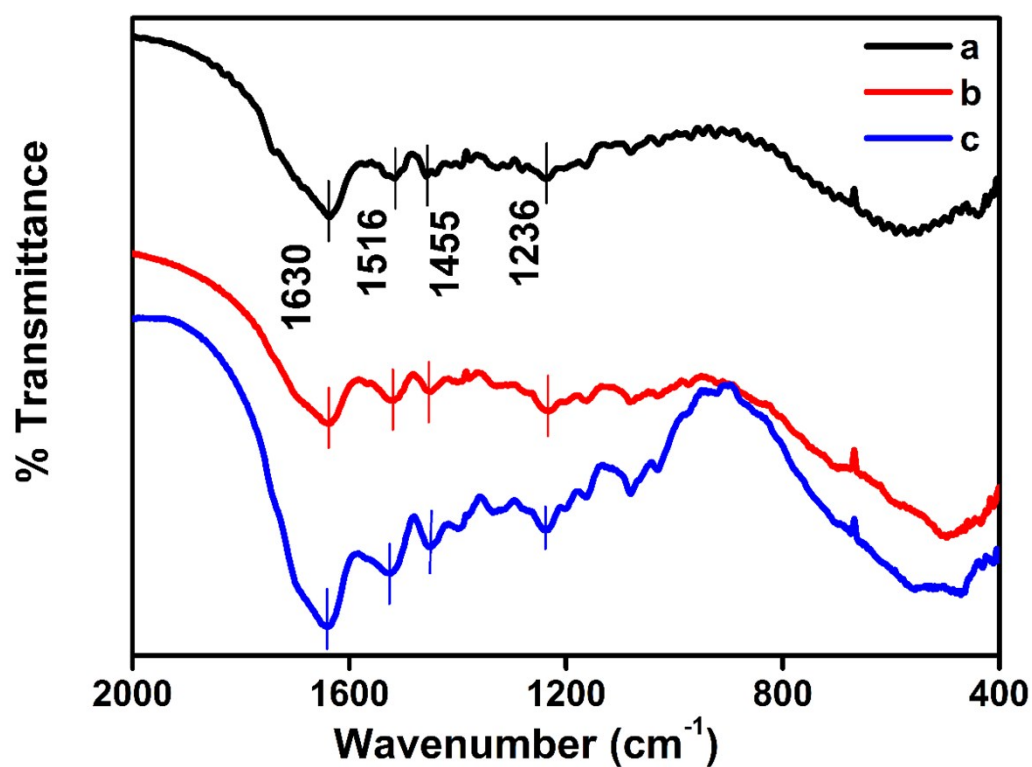


Fig. S5. FTIR spectra for the hydrogels: (a) bare hydrogel (black), (b) bare hydrogel cross-linked with EDC (red) and (c) hydrogel cross-linked with EDC containing Au NC (blue).