Supporting Information

Unique quenching of fluorescent copper nanoclusters based on target-induced oxidation effect: a simple, label-free, highly sensitive and specific bleomycin assay

Haiyin Li,[§] Chuanfeng Wang,[§] Panpan Gai, Ting Hou, Lei Ge* and Feng Li*

College of Chemistry and Pharmaceutical Sciences, Qingdao Agricultural University,

Qingdao 266109, People's Republic of China

[§]H.Y. Li and C.F. Wang contributed equally to this work.

* Corresponding authors. Tel/Fax: 86-532-86080855

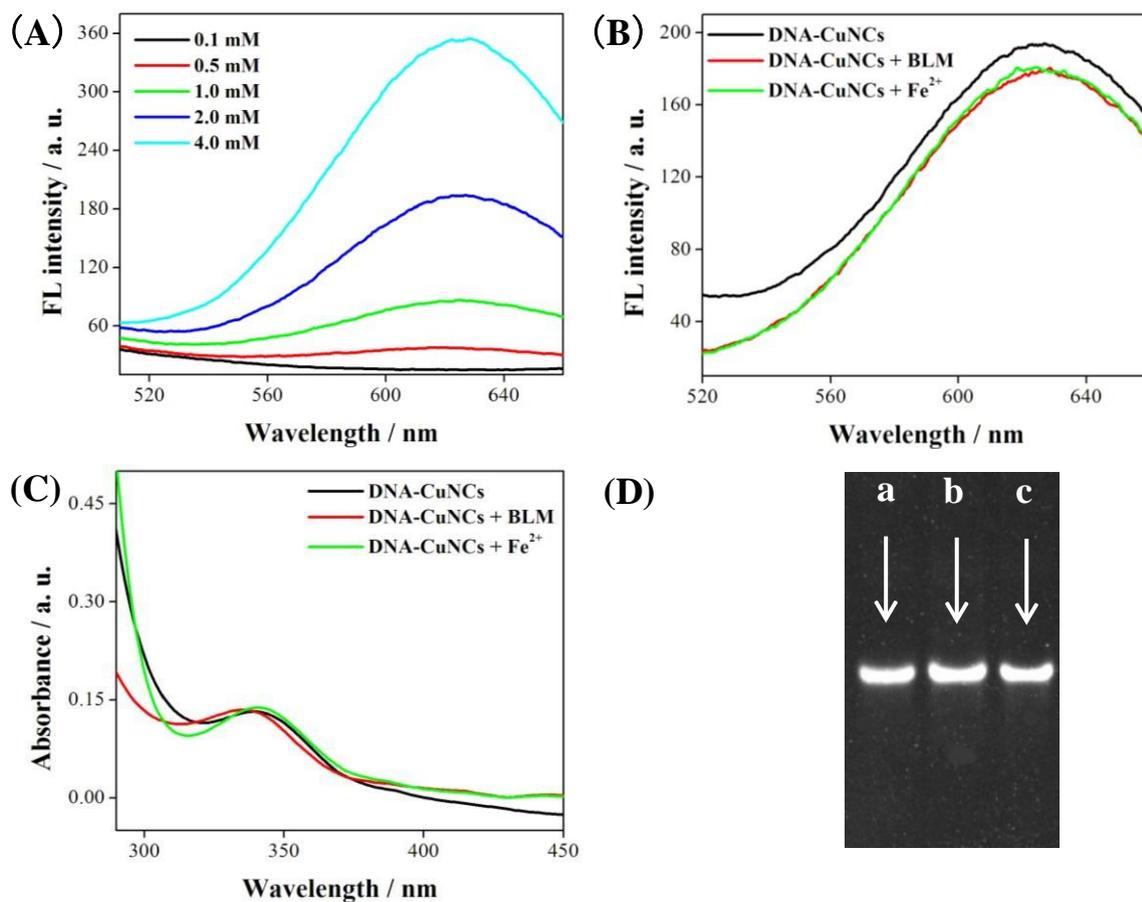E-mail: lifeng@qust.edu.cn (F. Li), lge@qau.edu.cn (L. Ge)

Fig. S1. (A) Fluorescence spectra of CuNCs obtained using sodium ascorbate with different concentrations; (B) Fluorescence spectra of CuNCs under different conditions; (C) UV-Vis spectra of CuNCs under different conditions; (D) Agarose gel (5%) electrophoresis images of (a) DNA, (b) CuNCs, and (c) CuNCs pre-incubation with BLM.
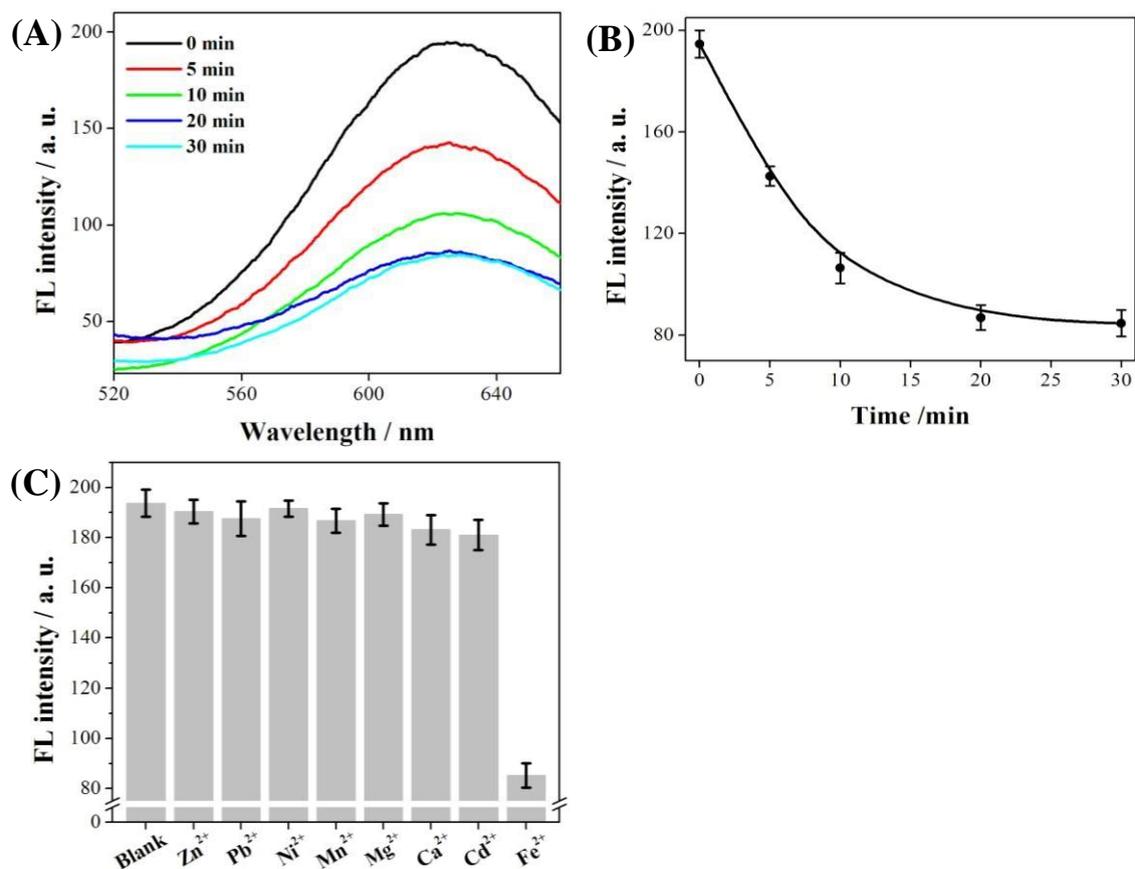
Fig. S2. (A) The fluorescence spectra of CuNCs upon the addition of BLM (8 μM) with different incubation times; (B) FL intensity of CuNCs at 626 nm versus the reaction time with BLM sample (8μM) in MOPS buffer; (C) FL intensity of CuNCs incubated with the mixture of BLM and different metal ions. The concentrations of BLM and metal ions were all 8 μM. The error bars represent the standard deviation of three repetitive measurements.
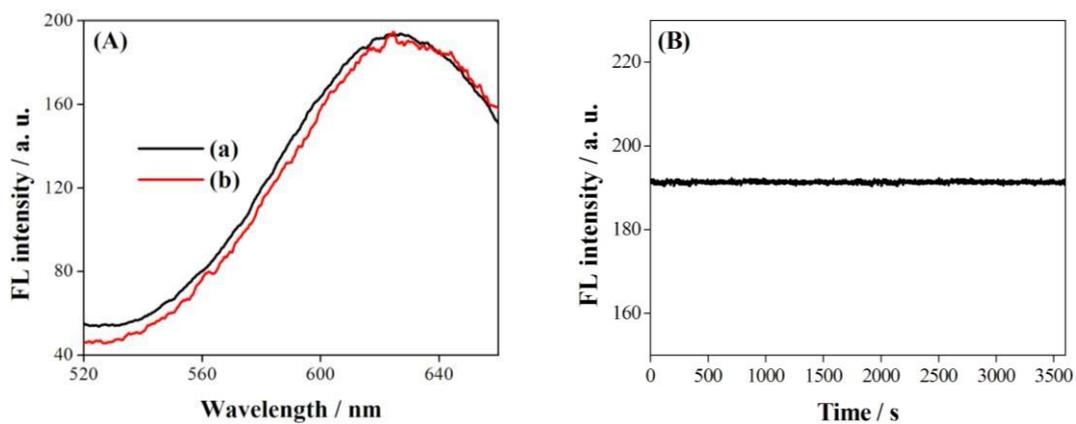
Fig. S3. (A) Fluorescence spectra of CuNCs in (a) MOPS buffer and (b) human serum sample; (B) FL intensity (at 626 nm) of CuNCs in human serum sample vs. the time after CuNCs being added into the serum sample. Conditions: [DNA] = 0.5 µM; [Cu^{2+}] = 100 µM; [sodium ascorbate] = 2.0 mM; 10 mM MOPS buffer (pH 7.6, containing 150 mM NaCl).
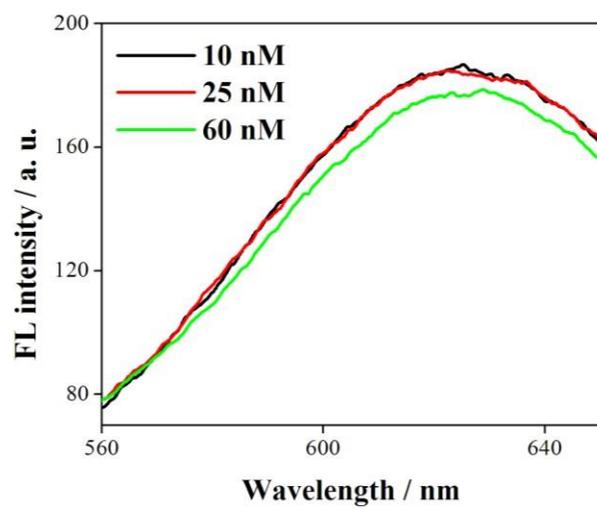
Fig. S4. The fluorescence spectra of CuNCs under different BLM concentrations in serum samples

Table S1. Detection of BLM spiked in serum samples (n = 3)

Sample No.	Added (nM)	Mean measured (nM)	Mean recovery [a] (%)	RSD (%)
1	10.0	9.6	96	8.46
2	25.0	27.0	108	7.91
3	60.0	61.8	103	9.85

[a]Recovery (%) = $100 \times (c_{\text{mean found}} / c_{\text{added}})$