Supporting Information

One-step rapid synthesis of single thymine-templated fluorescent copper

nanoclusters for "turn on" detection of Mn²⁺

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Fig. S1 PL spectra of Cu NCs@T, T + Cu, NH₂OH·HCl + Cu



Fig. S2 The relative PL intensities of Cu NCs@T solution in the presence of 0.001, 0.01, 0.1, 1, 10, 100 mM NaCl.



Fig. S3 PL intensities of Cu NCs@T as a function time under 354 nm light illumination.



Fig. S4 (A)The molar ratio of $CuSO_4/T$ and (B) the molar ratio of $CuSO_4/NH_2OH \cdot HCl$ on the PL intensity of as-prepared Cu NCs@T.



Fig. S5 PL spectra of Cu NCs templated by TA, TC, TG and T (1:1, mol/mol).



Fig. S6 The relative PL intensities of Cu NCs@T in the presence of Mn^{2+} (200 μ M) as a function of time. The relative PL intensity of Cu NCs@T-Mn²⁺ complex reached to a high value and increased gradually to a plateau in 40 min.



Fig. S7 Luminescence lifetime values of Cu NCs@T before (A) and after (B) adding Mn²⁺ upon an excitation at 354nm. Lifetime decays were fitted with global lifetimes.



Fig. S8 PL intensities of Cu NCs@T in the presence of 200 μ M Mn²⁺ at different pH values.



Fig. S9 PL intensities of Cu NCs@T in the presence of 200 μ M Mn²⁺ as a function time under 354 nm light illumination.