Electronic Supplementary Material (ESI) for Analytical Methods.

Supporting information

One-pot synthesis of tyrosine stabilized fluorescent gold nanoclusters and its application as turn-on sensor for Al^{3+} ions and turn-off sensor for Fe^{3+} ions

Xiaoyu Mu [a,b], Li Qi *[a], Juan Qiao [a], Huimin Ma [a]

[a] Beijing National Laboratory for Molecular Sciences; Key Laboratory of Analytical Chemistry for Living Biosystems, Institute of Chemistry, Chinese Academy of Sciences, 100190 Beijing, China

[b] Graduate School, University of Chinese Academy of Sciences, 100049 Beijing, China

* Correspondence: Li Qi

E-mail address: **qili@iccas.ac.cn**

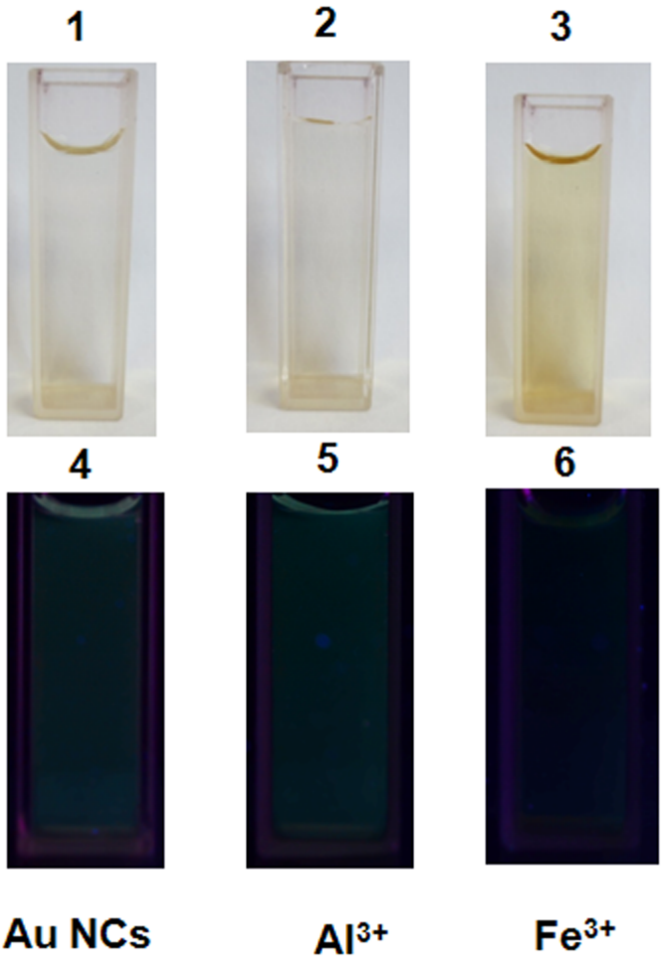

Fig. S1. Photographs under room light (1, 2, 3) and 365 nm UV light irradiation (4, 5, 6) of Au NCs before (1, 4) and after addition of Al^{3+} (2, 5) and Fe^{3+} (3, 6).

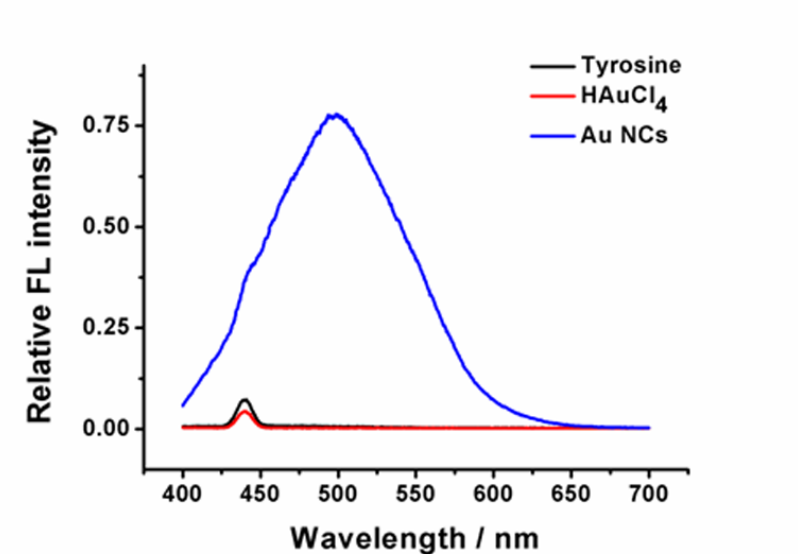

Fig. S2. The fluorescence spectra of the Au NCs, tyrosine solution and $HAuCl_4$ solution.

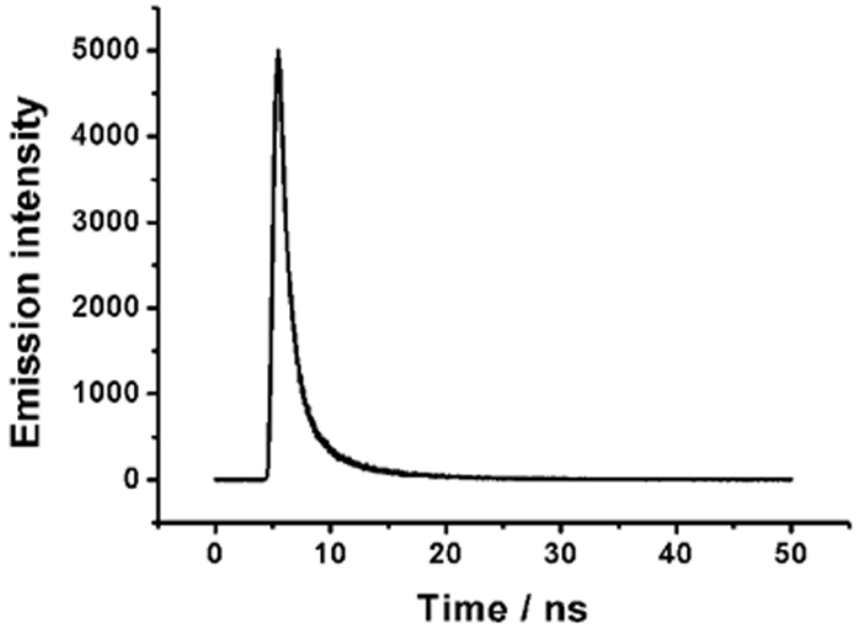

Fig. S3. Fluorescence lifetimes of the synthesized Au NCs in aqueous solution, data were collected at 498 nm with excitation at 365 nm.

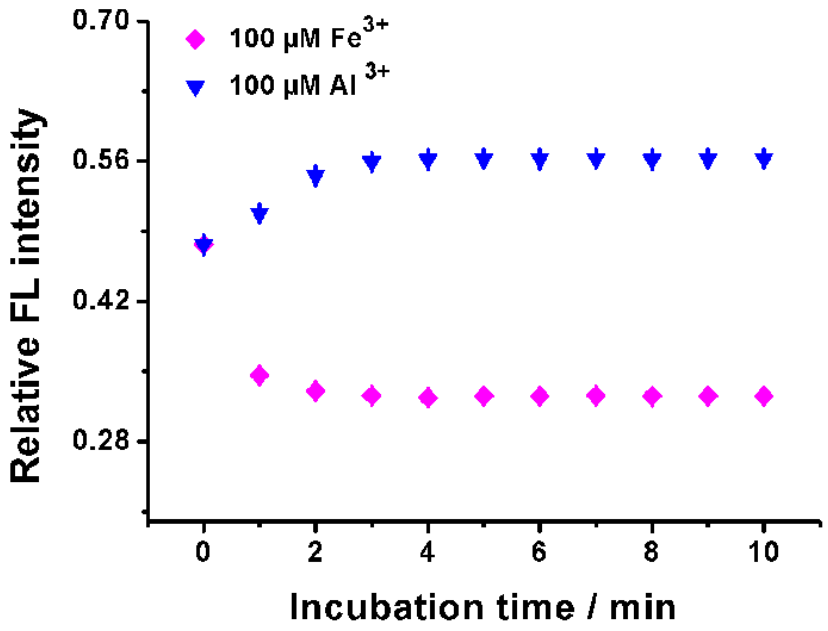

Fig. S4. Optimization of the incubation time for the fluorescence variation of the Au NCs in the presence of 100.0 μM Fe^{3+} ions (pink square) and Al^{3+} ions (blue triangle).

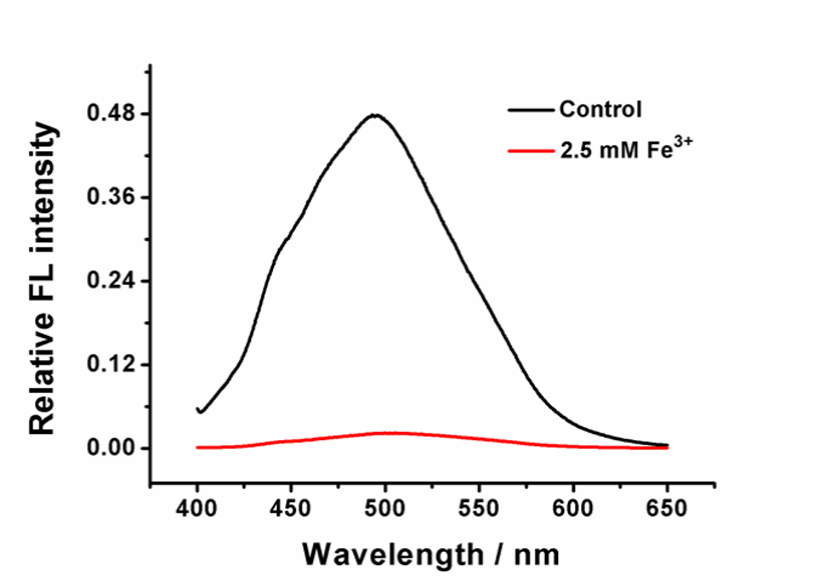

Fig. S5. The fluorescence response of the Au NCs upon addition of 2.5 mM Fe^{3+} ions.

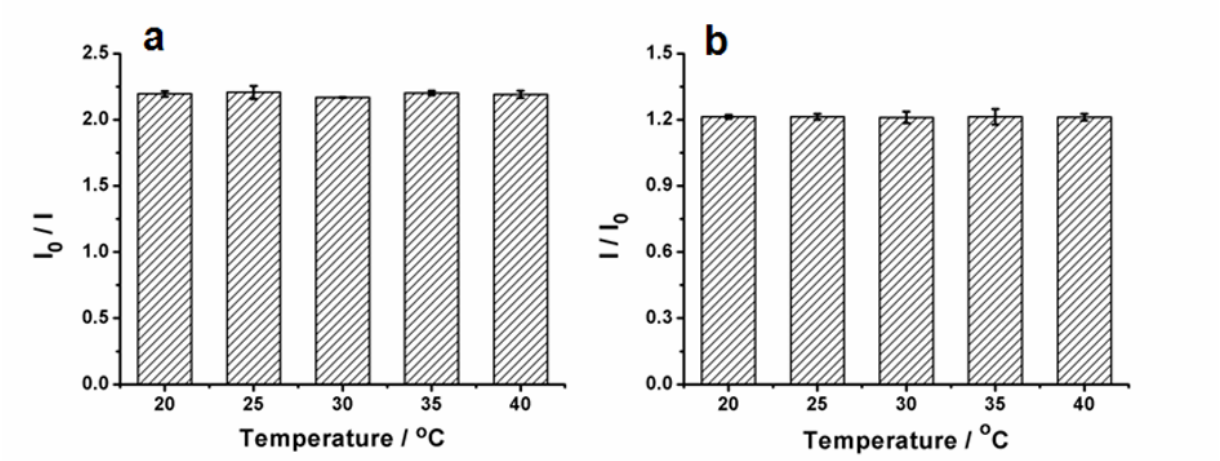

Fig. S6. The effect of temperature on the fluorescence response of Au NCs when exposed to Fe^{3+} (a) and Al^{3+} (b).

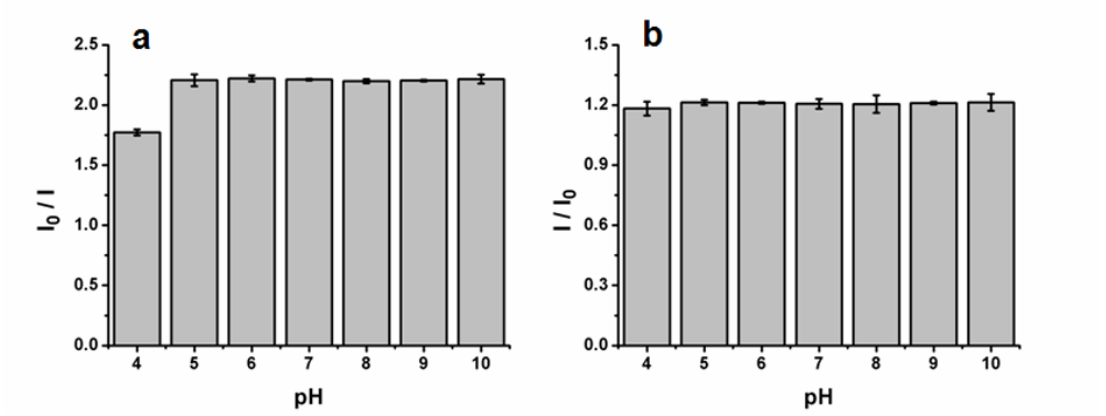

Fig. S7. The effect of pH on the fluorescence response of Au NCs when exposed to Fe^{3+} (a) and Al^{3+} (b).

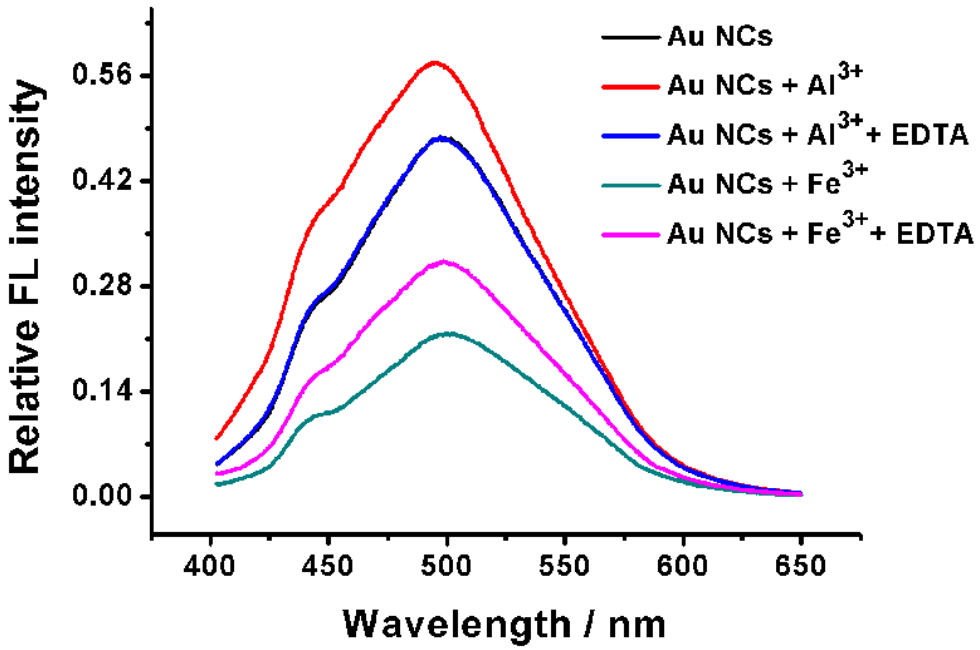

Fig. S8. Fluorescence spectra of the Au NCs solution , in the presence of 500.0 μM Al^{3+} or 500.0 μM Fe^{3+}, and in the presence of 500.0 μM EDTA and 500.0 μM Al^{3+} or Fe^{3+}.