

Electronic Supplementary Information

Sensitive and selective detection of Hg²⁺ and Cu²⁺ ions by fluorescent Ag nanoclusters synthesized via hydrothermal method

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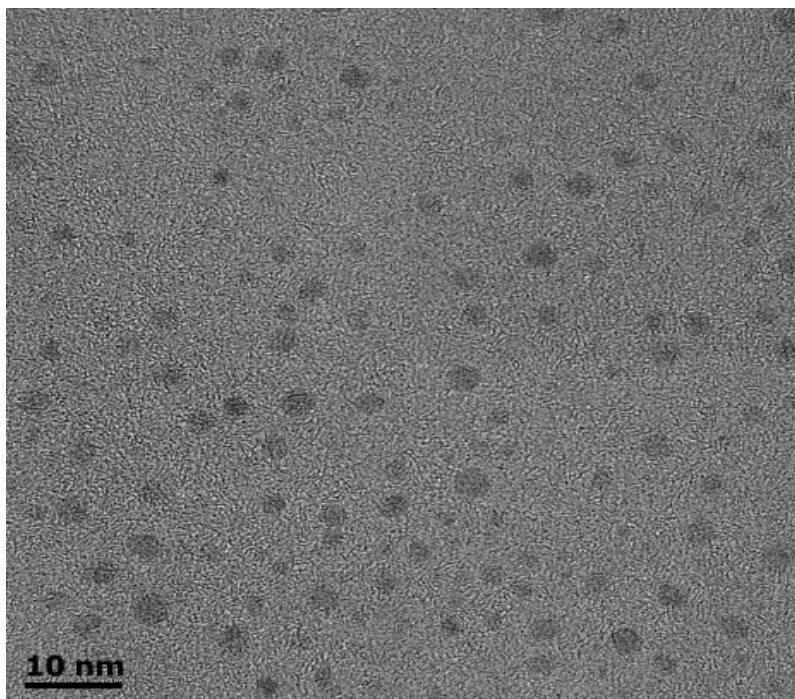


Figure S1. The TEM image of Ag NCs prepared without N₂ incoming (2.9nm in average diameter).

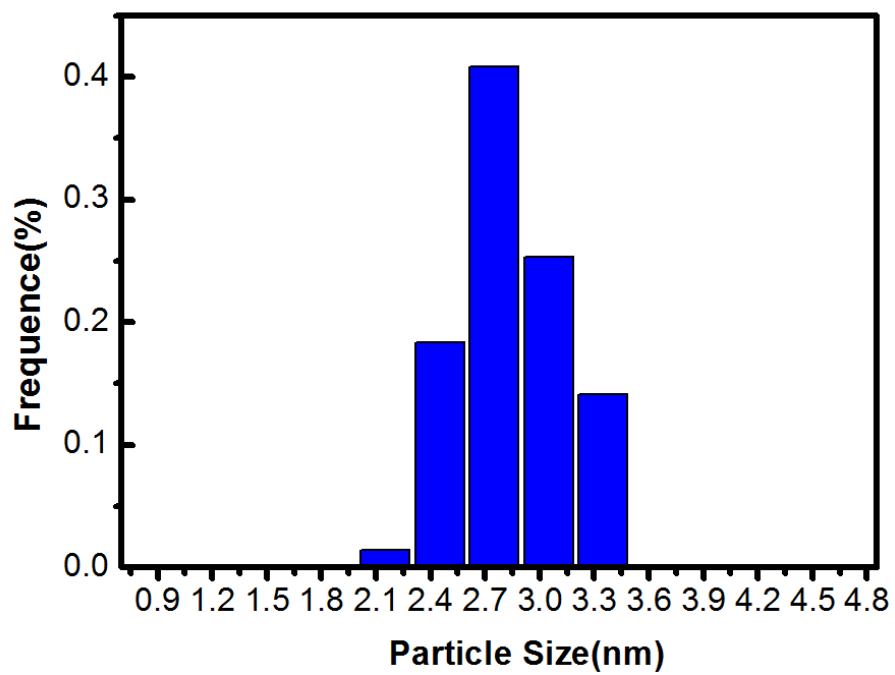


Figure S2. Size distribution histogram of the Ag NCs prepared without N₂ incoming.

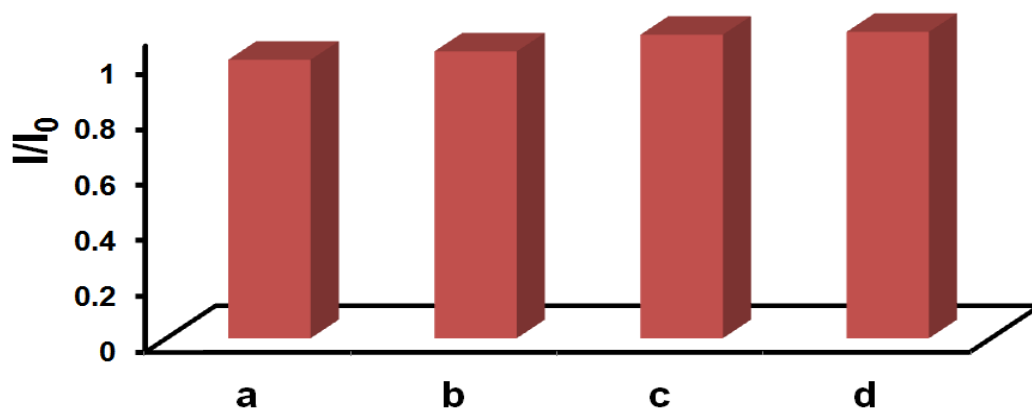


Figure S3. Relative fluorescence (I/I_0) of freshly prepared Ag NCs (a) , placed on two months Ag NCs (b), placed on four months Ag NCs (c) and placed on six months Ag NCs (d), (I_0 and I correspond to the fluorescence intensity of freshly prepared and placed months).

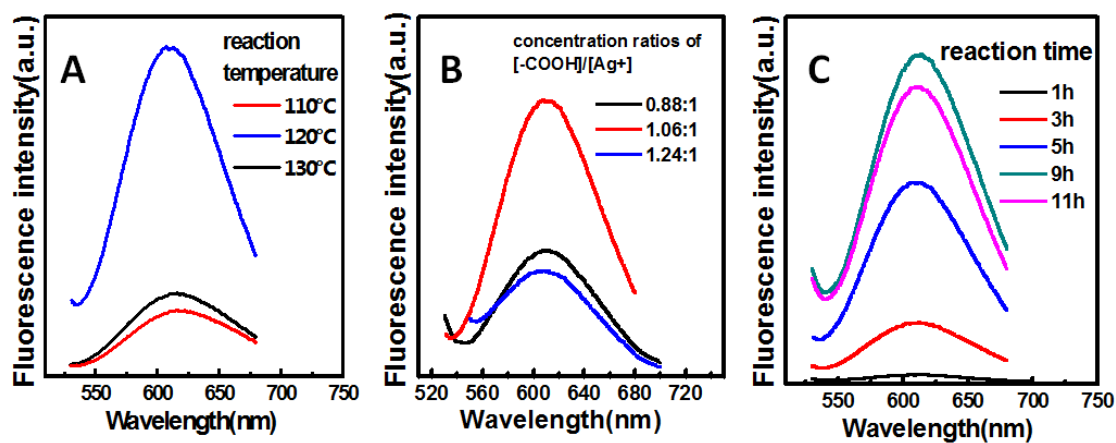


Figure S4. Temporal evolution of fluorescence emission spectra of the Ag NCs with different reaction temperatures (A), concentration ratios of $[-COOH]/[Ag^+]$ (B) and times (C), as labeled respectively.

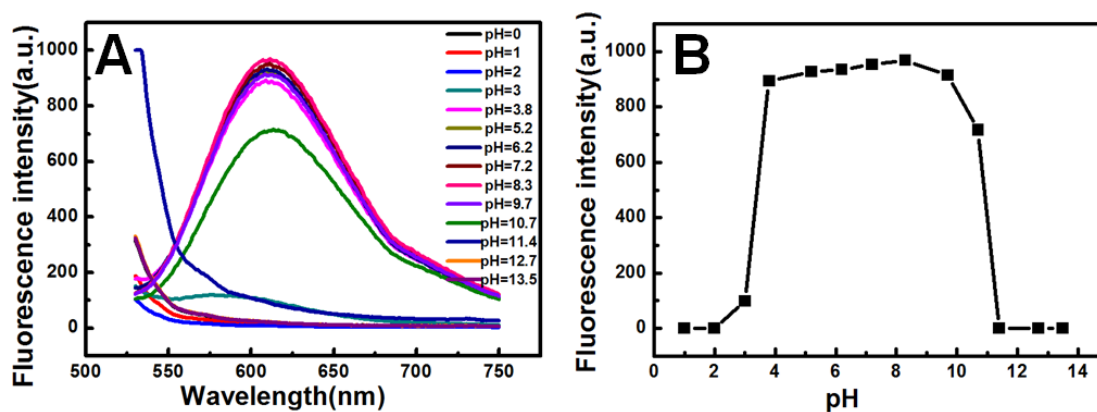


Figure S5. (A) Fluorescence spectra of the Ag NCs in a solution with different pH from 0 to 13.5. (B) Corresponding fluorescence intensity of the Ag NCs in a solution with different pH from 0 to 13.5.

Table S1. Determination of Hg^{2+} by fluorescent metal probes

Fluorescent metal probe	Linear range	LOD	Reference
DNA-Ag NCs	2.5 nM–50nM	0.9 nM	G.-Y. Lan et al. ⁽¹⁾
dBSA-Ag NCs	10 nM–5 μM	10 nM	C. Guo et al. ⁽²⁾
Lys-AgNCs	1 μM –15 μM	0.6 μM	T. Zhou et al. ⁽³⁾
CTAB-coatedGSH–Ag NCs	0–125 nM	5 nM	Xun Yuan et al. ⁽⁴⁾
PMAA-Ag NCs	10 nM–20 μM	10 nM	This paper

Table S2. Determination of Cu²⁺ by fluorescent metal probes

Fluorescent metal probe	Linear range	LOD	Reference
DNA-Ag NCs	1 nM-200 nM	8 nM	G. Y. Lane t al. ⁽⁵⁾
11-MUA-Au NPs	10 nM– 1 μM	87 nM	Y. Guo et al. ⁽⁶⁾
MPAA-Ag NCs	5 μM – 15mM	5 μM	X. Liu et al. ⁽⁷⁾
PMAA-Ag NCs	10 nM–30 μM	10 nM	This paper

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