Supplementary Material

Methionine capped gold nanoclusters as a fluorescence-enhanced probe for cadmium(Ⅱ) sensing

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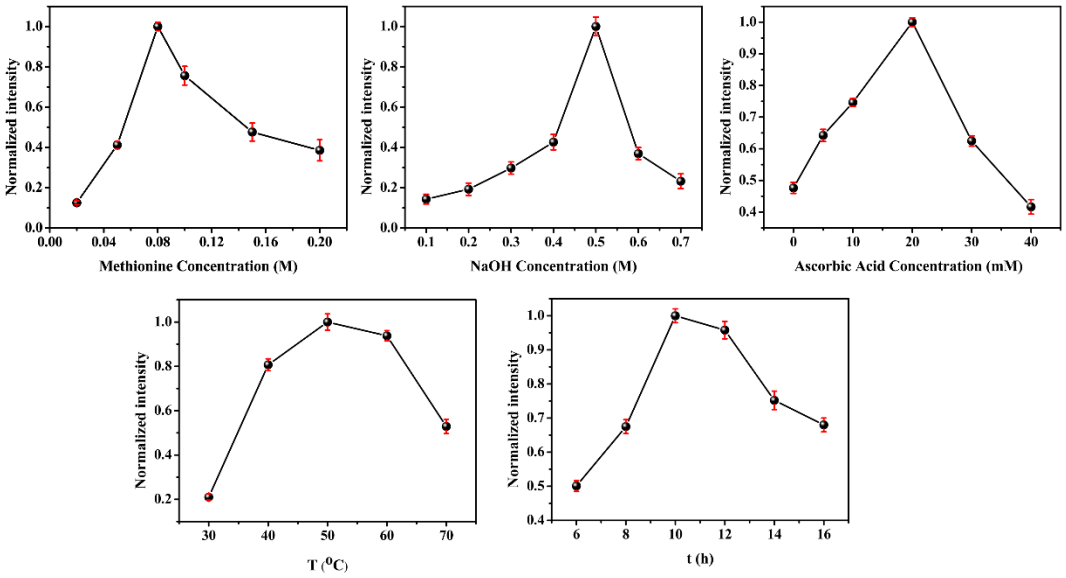

Figure S1. Optimization of synthesized conditions of Au NCs

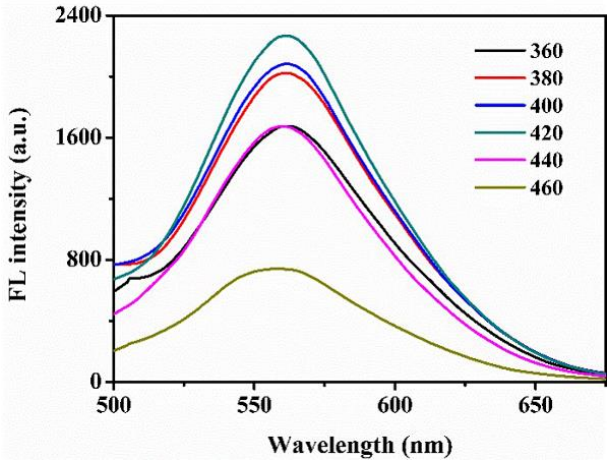

Figure S2. Emission spectra of fluorescent Au NCs prepared in a typical synthesis with different excitation wavelengths.

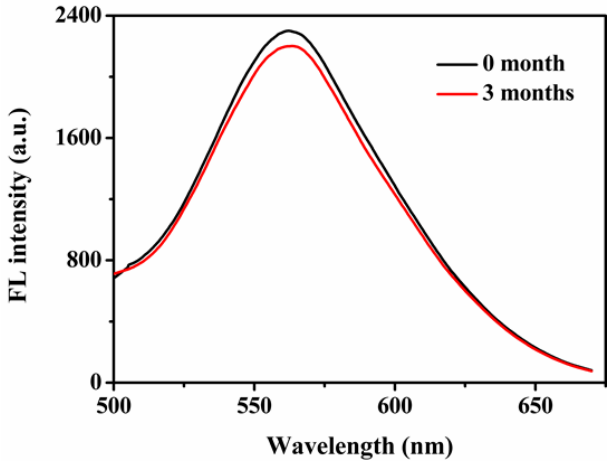

Figure S3. The fluorescence spectra of Met-Au NCs storing in dark at 4℃ before and after three months.

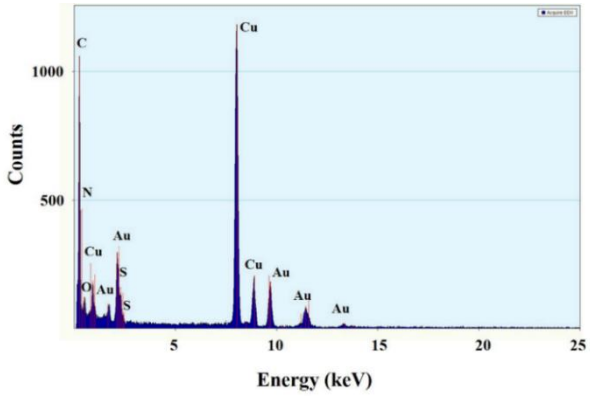

Figure S4. EDX spectrum for as-prepared Au NCs.

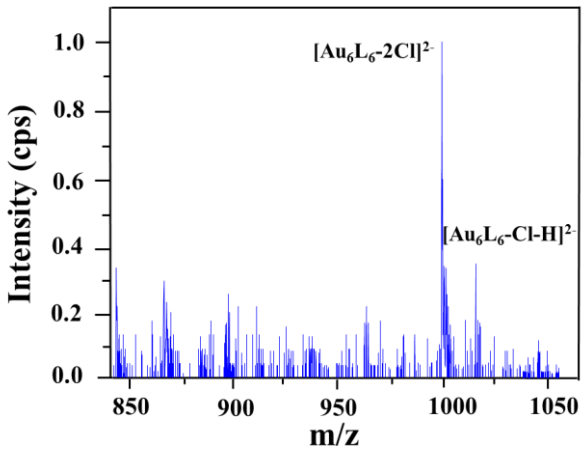

Figure S5. ESI mass spectra (negative mode) of as-synthesized Au NCs

Figure S6. The color change of Au NCs under UV irradiation when exposed to different concentration of Cd^{2+} ions.

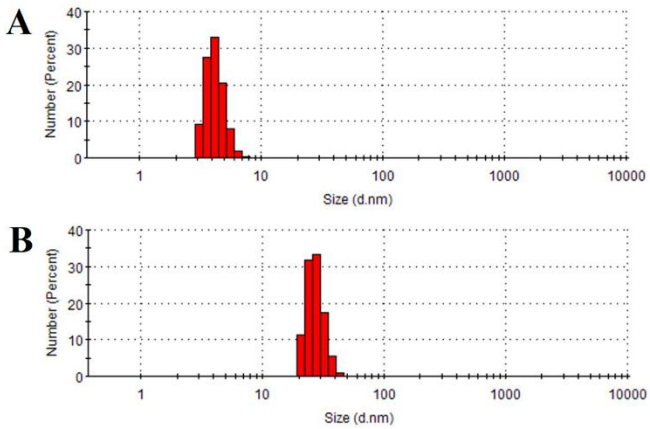

Figure S7. Hydrodynamic diameter measured using DLS of Au NCs (A) and Au NCs in the presence of 50 μM Cd^{2+} (B) at neutral pH.

Table S1. Quantification Results of EDX from Au NCs.

	Element	Weight%	Atomic%	Uncert%	Detector Correction	K-Factor
Au NCs	N(K)	1.08	7.22	0.24	0.28	3.466
	O(K)	6.08	35.33	0.32	0.51	1.889
	S(K)	5.64	16.34	0.25	0.93	1.021
	Au(k)	87.17	41.10	1.33	0.99	4.256

Table S2. Comparison of this method with other reported approaches for the detection of Cd^{2+} using different optical systems.

Probe	LOD (M)	Linear range (M)	Time	Reals samples	Reference
Colorimetric (Ag NPs)	1.30×10^{-7}	2.27×10^{-7}-3.18×10^{-6}	10 min	Water	[1]
Aptamer probe (Cd-2-2)	4.0×10^{-8}	0-1.0×10^{-6}	30 min	-	[2]
Organic dyes (NHQ)	2.165×10^{-7}	0-6×10^{-6}	-	-	[3]
Organic dyes (PD)	3.20×10^{-8}	0-2.5×10^{-6}	10 min	Cells	[4]
QDs (SiO_2-S-Zn-CdS)	1.0×10^{-7}	3.0×10^{-7}-2.6×10^{-5}	7 min	solanum nigrum L	[5]
QDs (Ag_2S)	5.46×10^{-7}	1.0×10^{-6}-4.0×10^{-5}	2 min	Water	[6]
NCs (BSA-Au/Ni))	1.75×10^{-9}	5.0×10^{-9}-1.0×10^{-6}	10 min	serum	[7]
NCs (GSH-Au)	2.40×10^{-8}	0-1.4×10^{-6}	-	Water	[8]
NCs (Met-Au)	1.23×10^{-8}	5×10^{-8}-3.5×10^{-5}	1 min	Water, Milk	This work

References

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