Electronic Supplementary Material (ESI) for Analyst
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Hg^{2+}-mediated aggregation of gold nanoparticles for colorimetric screening of biothiols

Hu Xu, Yiwen Wang, Xiaomei Huang, Yan Li, Hua Zhang and Xinhua Zhong*

Shanghai Key Laboratory of Functional Materials Chemistry, Department of Chemistry, East China University of Science and Technology, Shanghai 200237, P. R. China

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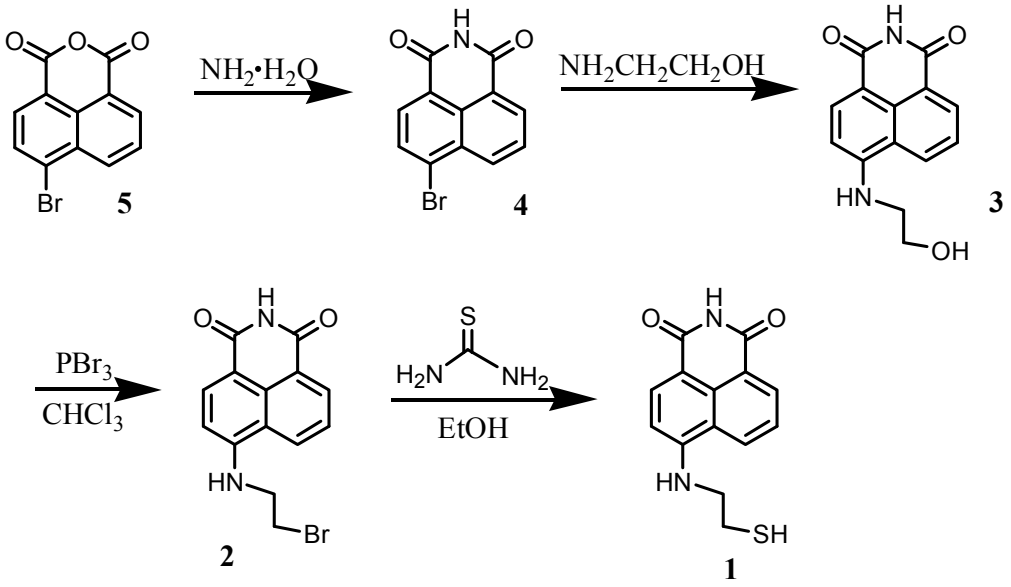

Scheme S1 Synthetic route of 4-(2-mercaptoethylamino)-1,8-naphthalimide (**1**).

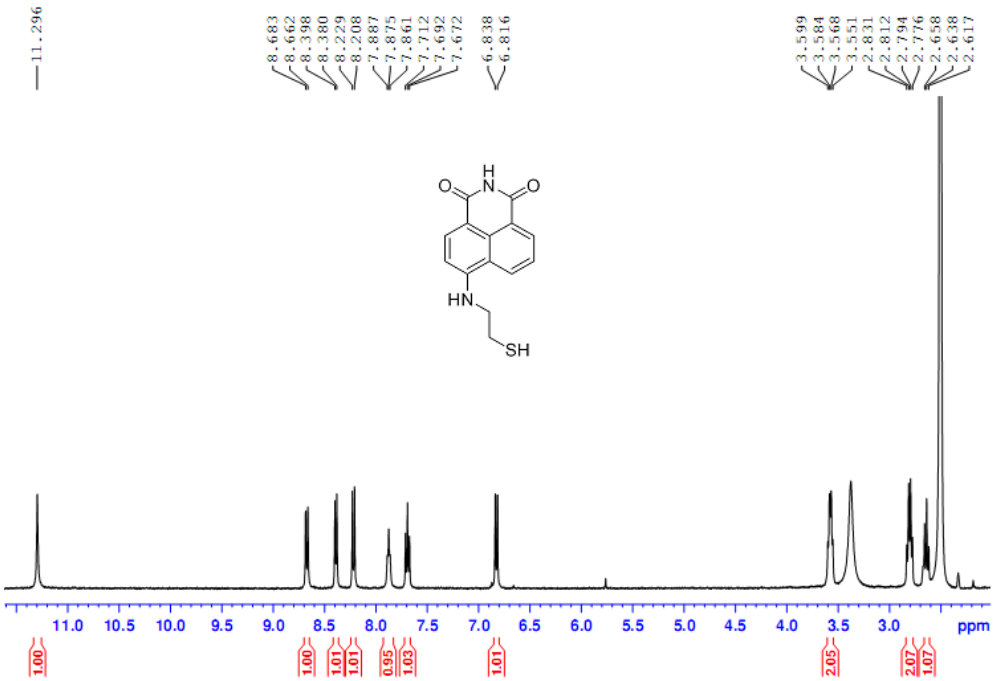

Fig. S1 ^{1}H-NMR spectrum of **1** in DMSO-d_6.

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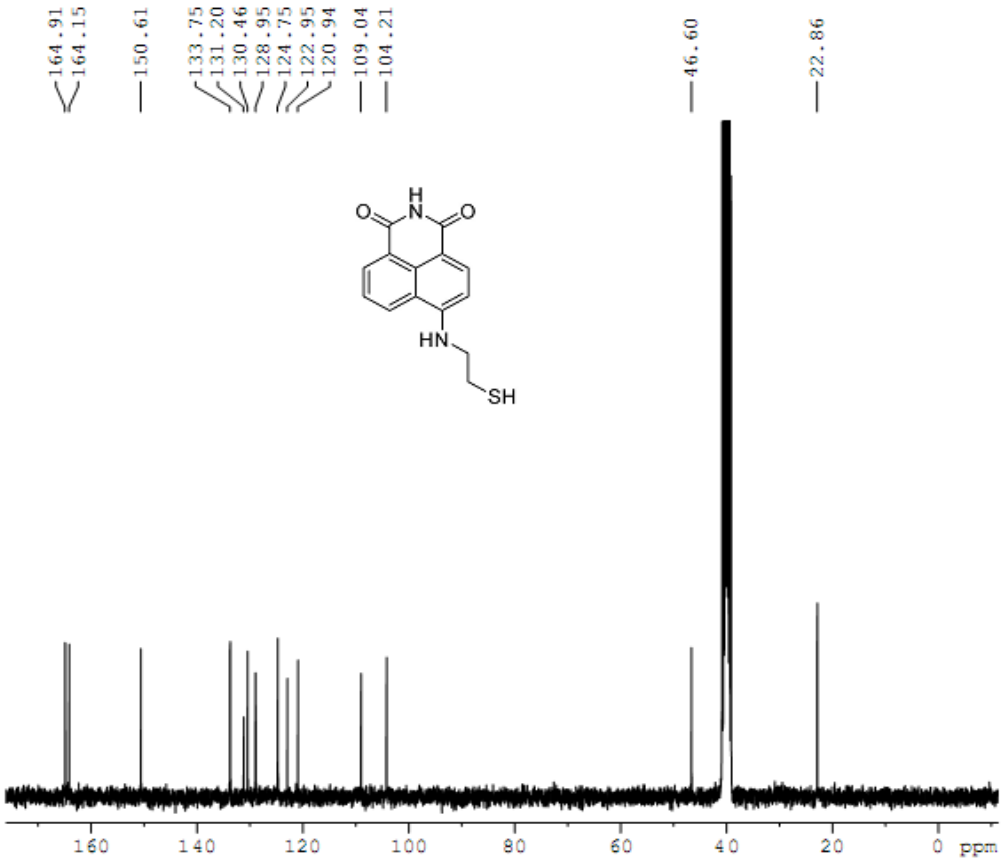


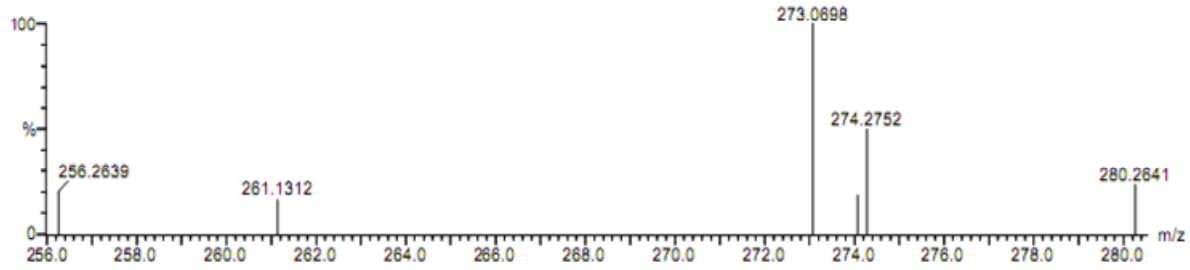
Fig. S2 ^{13}C-NMR spectrum of **1** in DMSO-d_6.

Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 5.0 mDa / DBE: min = -1.5, max = 100.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 2

Monoisotopic Mass, Even Electron Ions
29 formula(e) evaluated with 3 results within limits (up to 1 best isotopic matches for each mass)
Elements Used:
C: 0-20 H: 0-20 N: 0-2 O: 0-2 S: 0-1

ZHU-WH
ZWH-HX-07 34 (1.136) Cm (8:36) 1: TOF MS ES+
1.91e+004



Minimum:		5.0	50.0	-1.5			
Maximum:				100.0			
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	i-FIT (Norm)	Formula
273.0698	273.0698	0.0	0.0	9.5	27.7	0.0	C14 H13 N2 O2 S

Fig. S3 HRMS spectrum of **1**.

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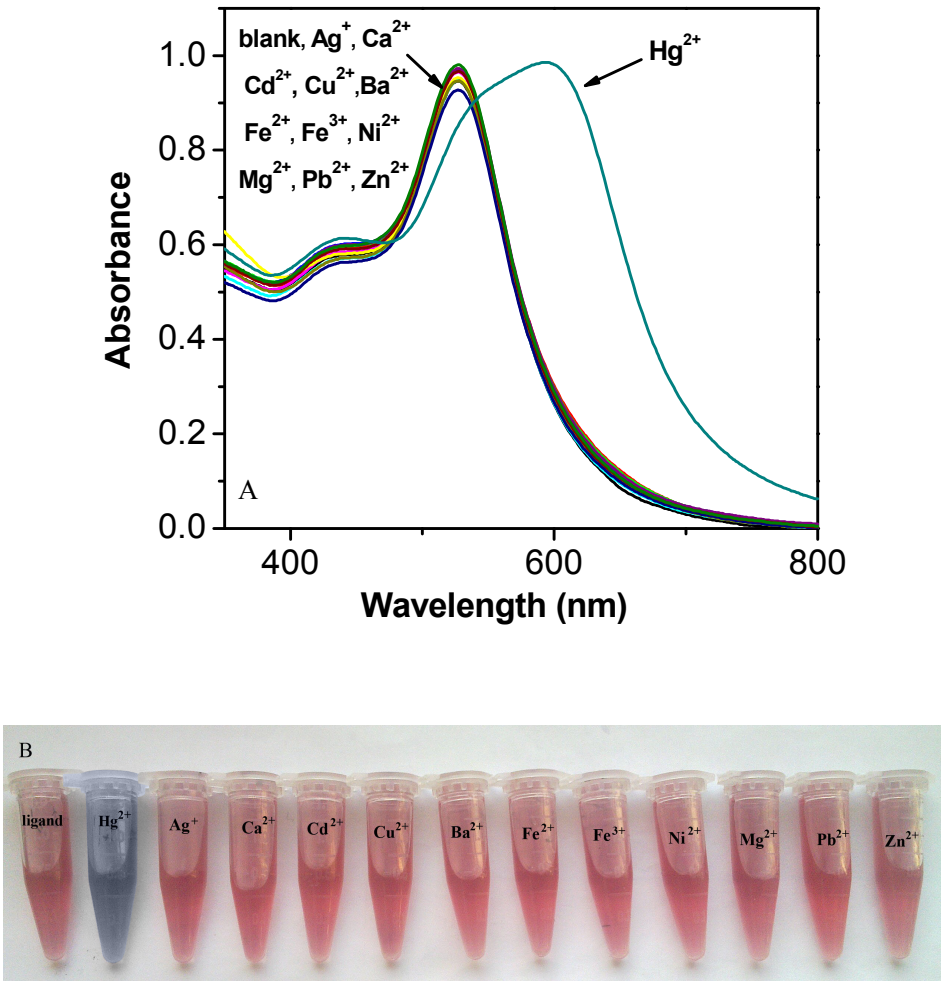

Fig. S4 (A) UV-vis spectra of AuNPs suspensions (5 nM) using **1** (9.0 μM) as capping ligand in the presence of various metal ions (all at 22.5 μM except for Hg^{2+} at 4.5 μM). (B) The corresponding photographs of solutions in (A).

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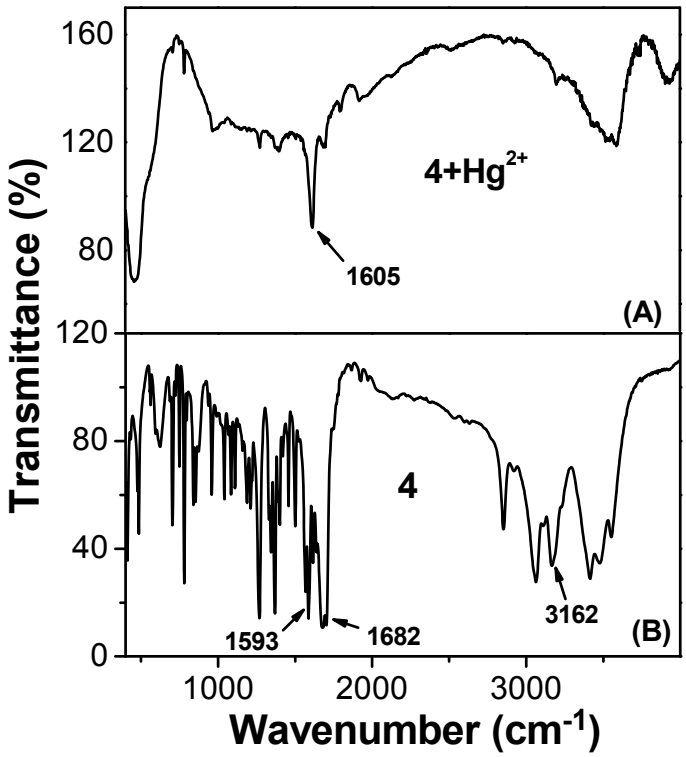

Fig. S5 The solid-state FTIR spectra of (A) **4**-Hg^{2+} complex and (B) **4**.

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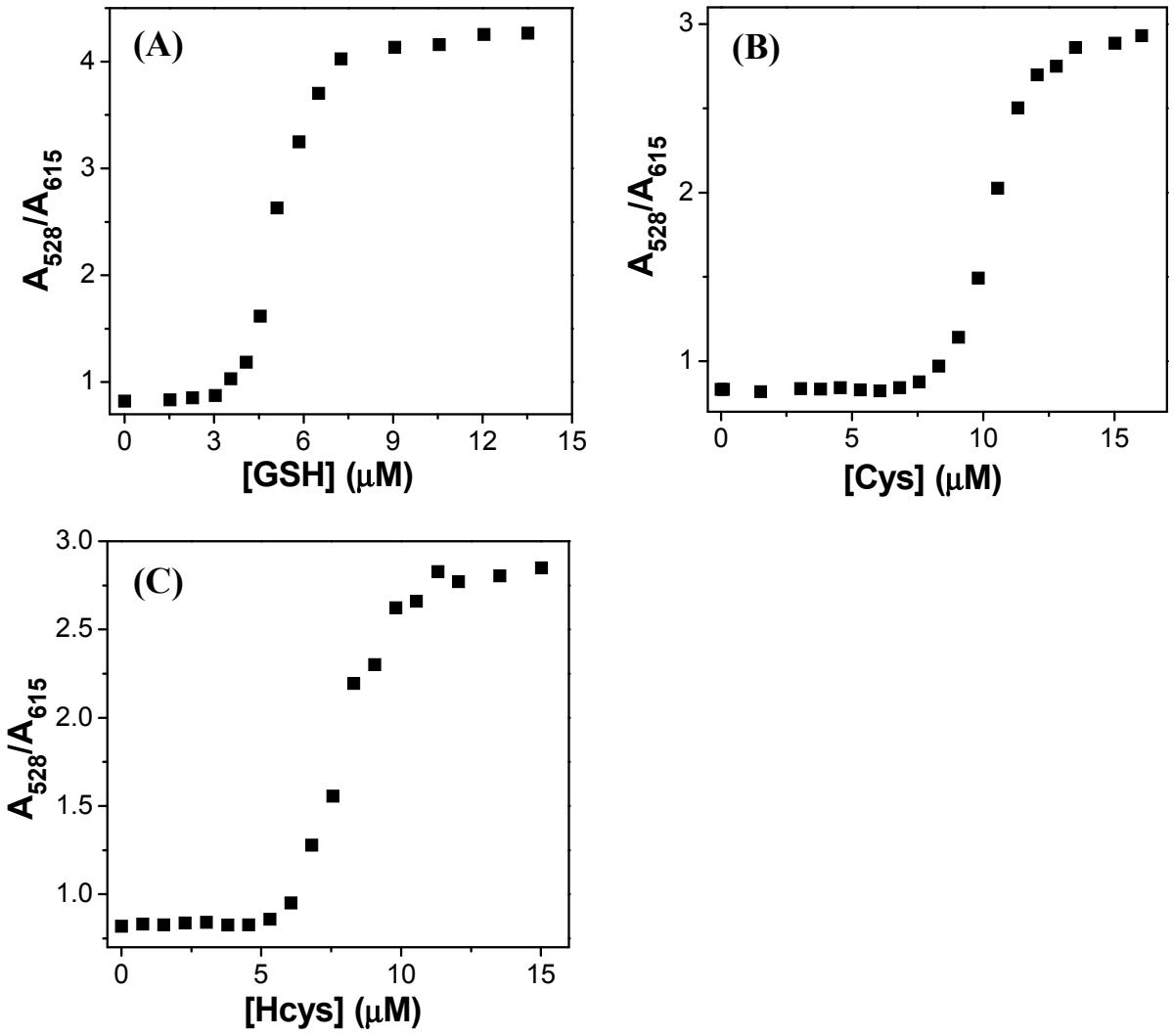

Fig. S6 Calibration curves of A_{528}/A_{615} *vs.* the biothiols concentrations of (A) GSH, (B) Cys, and (C) Hcys under Hg^{2+} concentration at 9.0 μM.