Electronic Supplementary Information

Development of a Gold Nanoparticle Based Anti-aggregation Method for Rapid Detection of Mercury(II) in Aqueous Solutions

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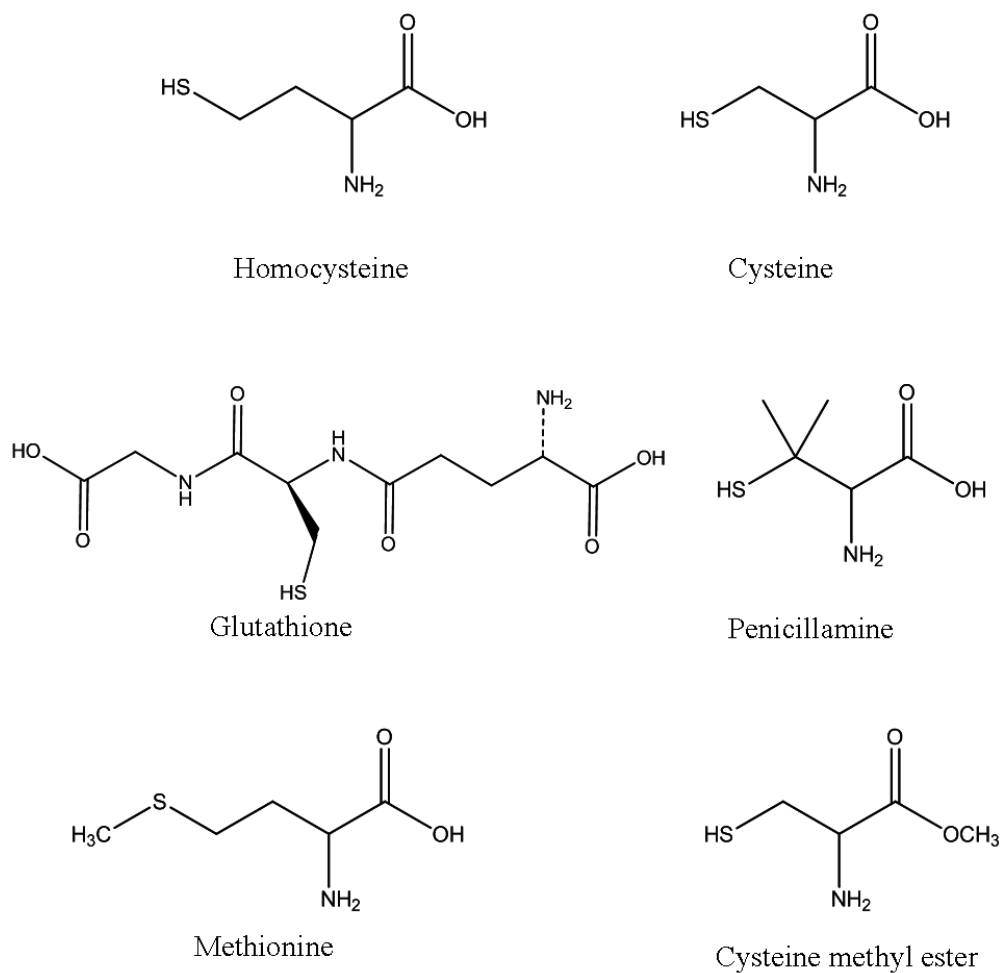
Figure S1. Structures of six aggregation agents used in this study.
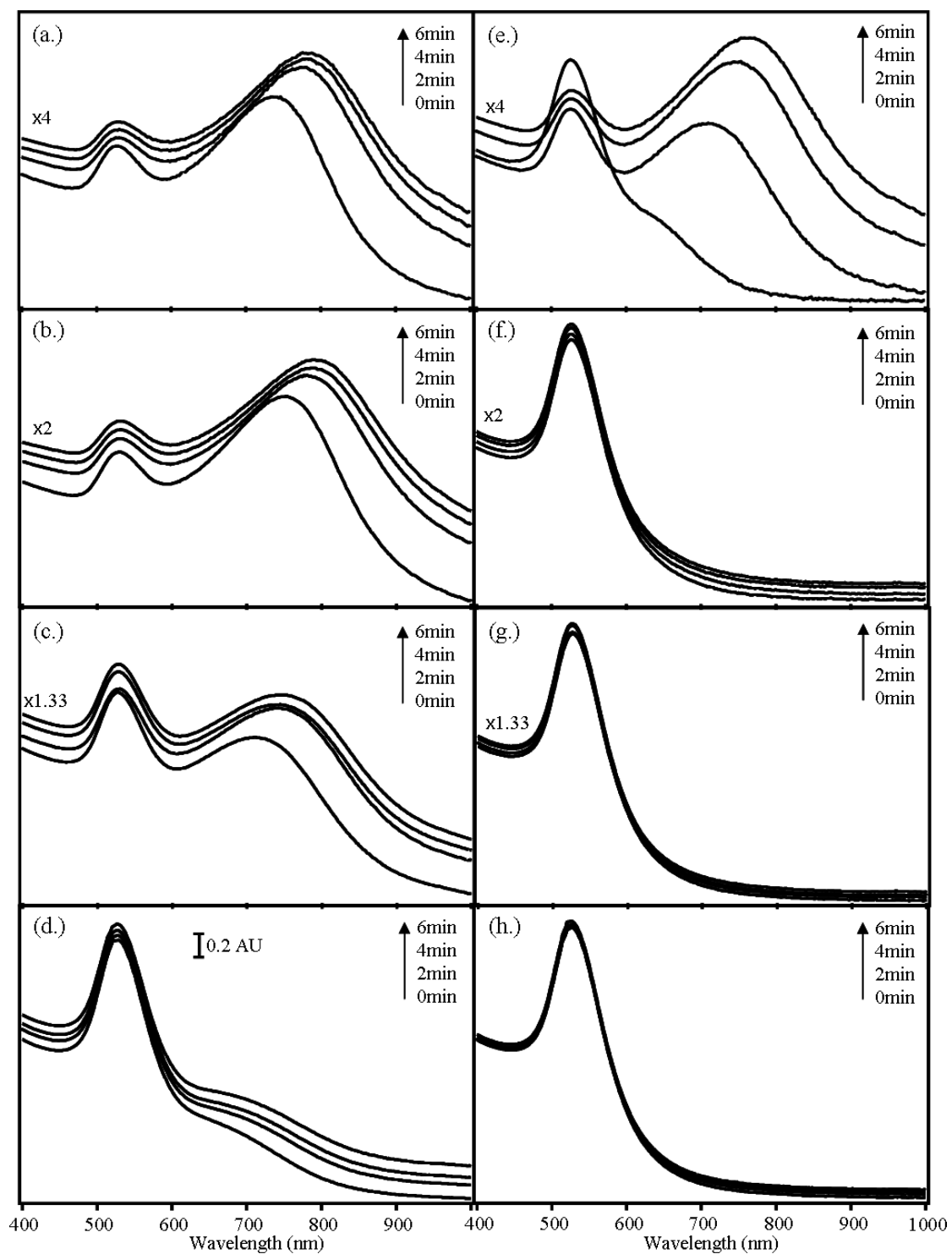
Figure S2. Extinction spectra of AuNPs under different gold nanoparticle concentrations (from top to bottom: 1.425 nM, 2.85 nM, 4.275 nM, and 5.7 nM) in the absence of Hg^{2+} (a~d) and in the presence of 1 μM Hg^{2+} (e~h). The particle concentration of gold nanocolloids was 2.85 nM, l-penicillamine concentration was 2 μM, the concentration of citrate buffer was 5 mM, the concentration of Cl^- was 10 mM, and the pH was 2.4.
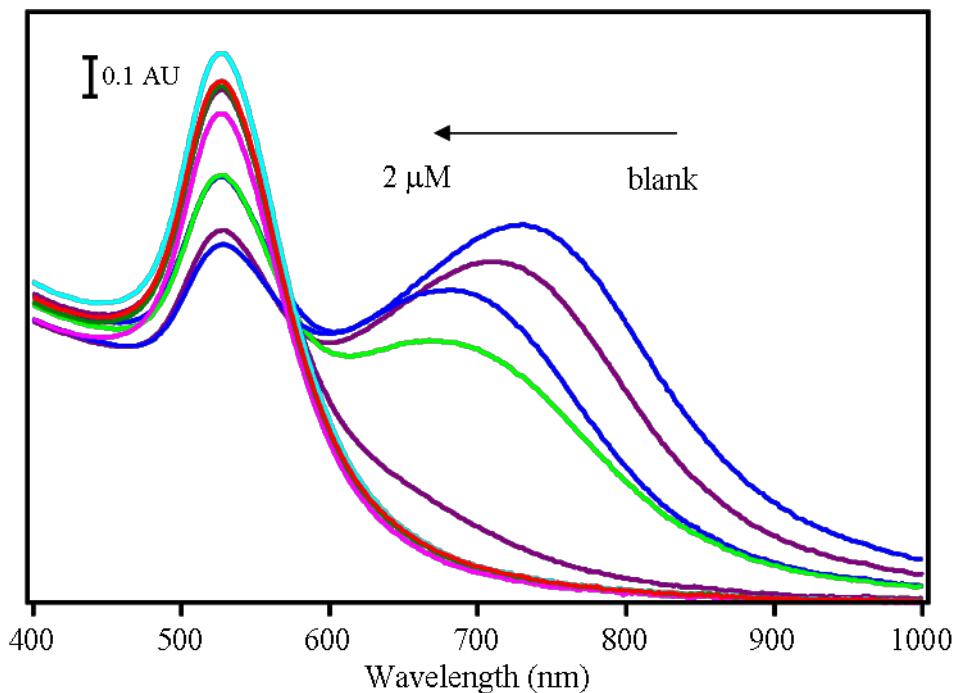
Figure S3. Extinction spectra of AuNPs in the presence of different concentrations of Hg^{2+}. The concentration of l-penicillamine was 2 μM, the concentration of citrate buffer was 5 mM, the concentration of Cl⁻ was 10 mM, the pH was 2.4 and the incubation time was 2 min.

Sample	Added (nM)	Found (nM)	Recovery (%)	RSD (%, n=3)
1	100	95.96	96.0	2.5
2	200	191.55	95.8	1.7
3	400	397.15	99.3	2.2

Table S1. Recovery of the proposed method for determination of Hg^{2+} in tap water samples.