Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Understanding Thiol-Induced Etching of Luminescent Gold Nanoclusters: Control of Lyszoyme Activity and Sensing of Thimerosal

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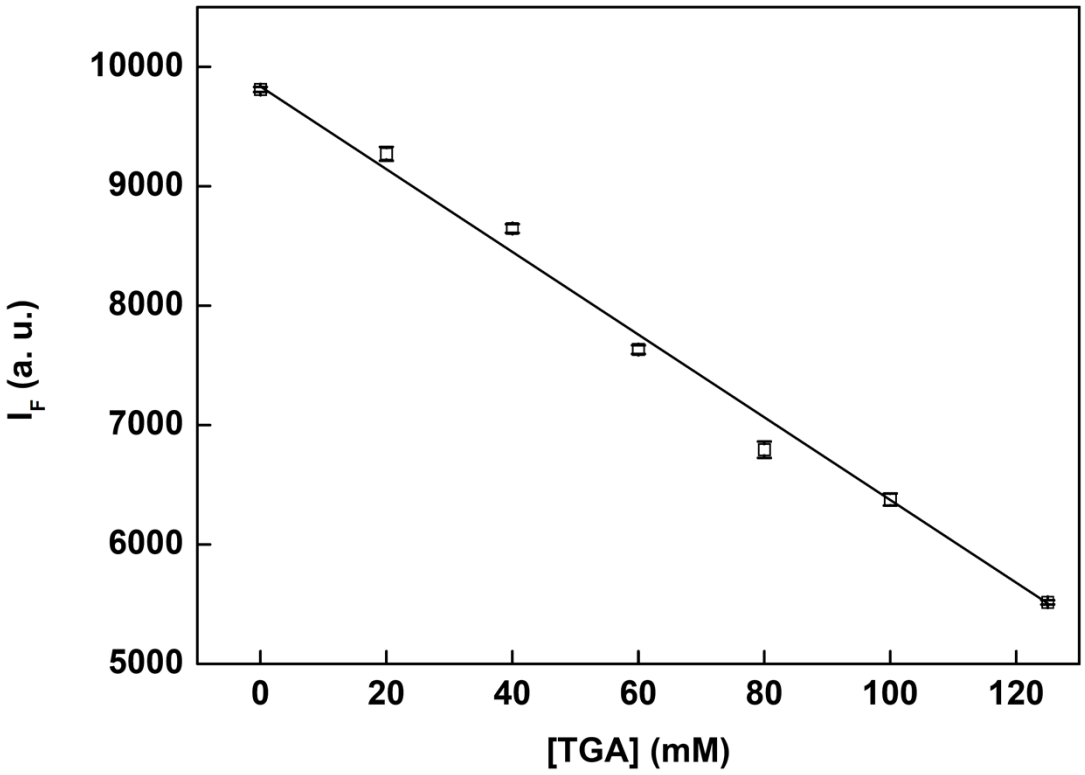

Figure S1. Fluorescence intensity at 455 nm of Au_8 clusters in the presence of different concentrations of TGA. The incubation time is 10 min.

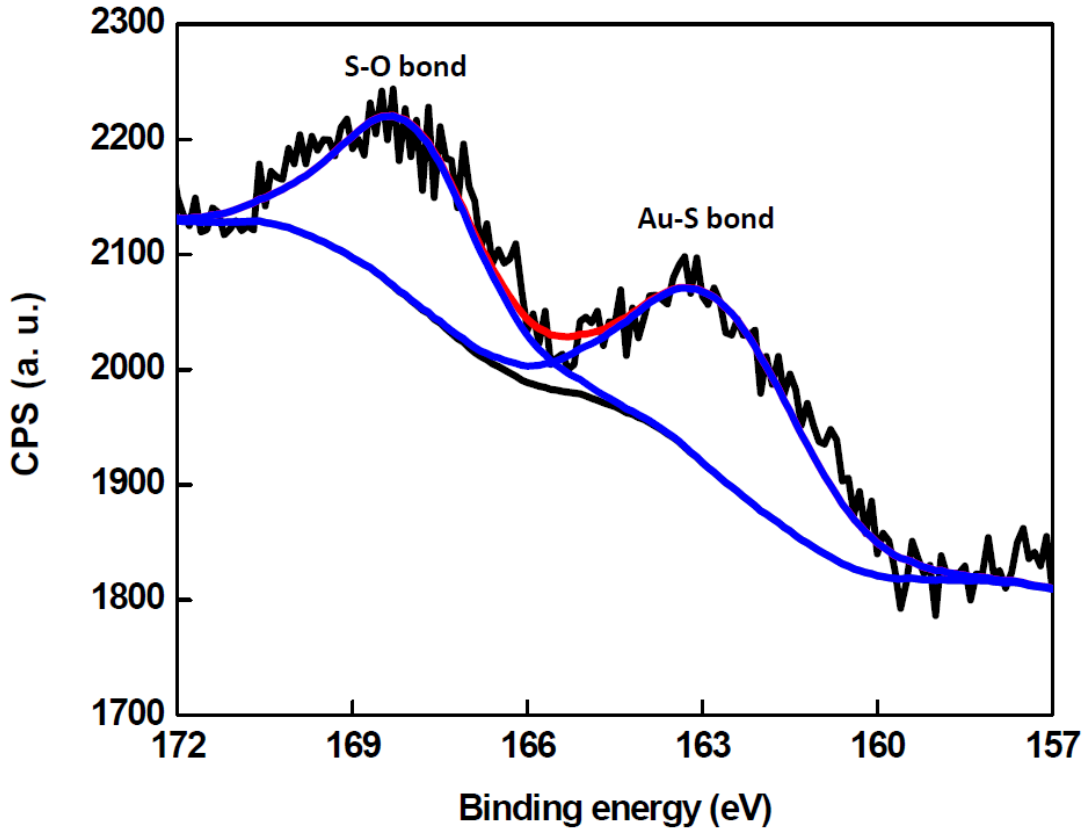

Figure S2. XPS spectrum of the insoluble products. The insoluble products were obtained from centrifugation of a solution containing Lys VI-stabilized Au_8 clusters and 125 μM TGA. The incubation time is 10 min.

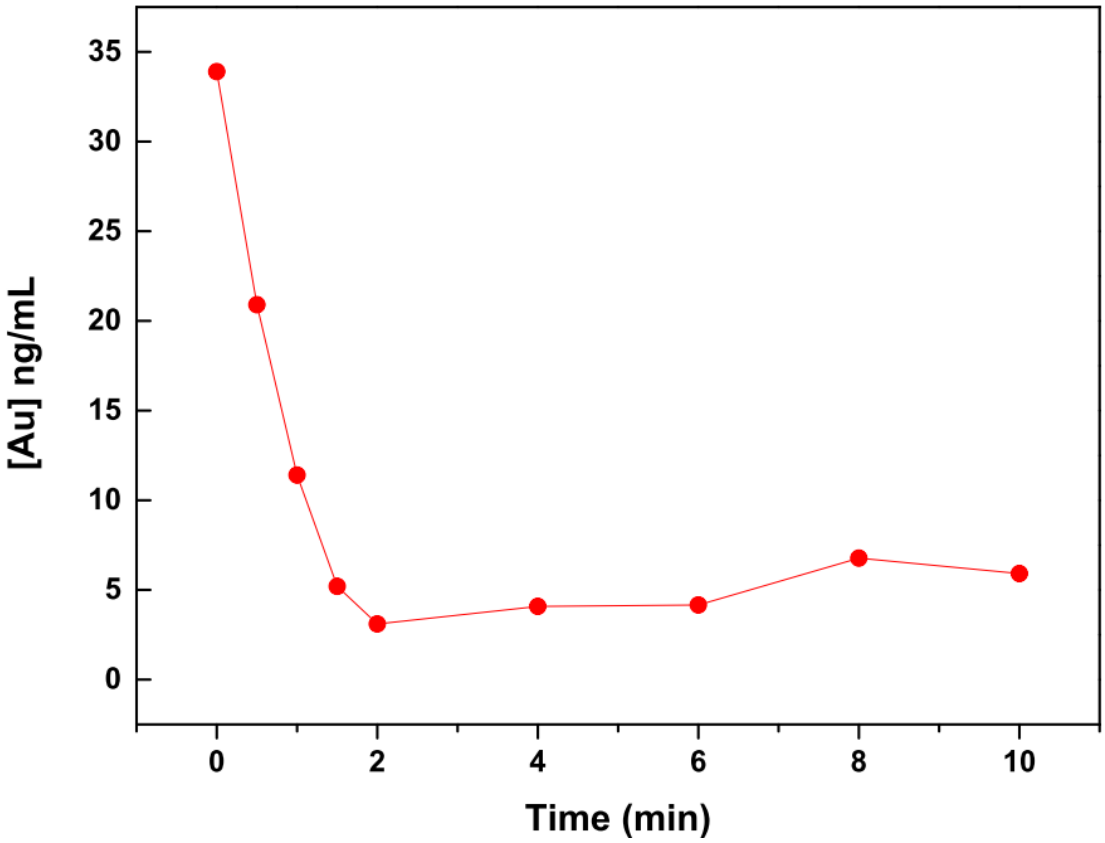

Figure S3. Time-course measurements of the Au concentration in the supernatant. The supernatant obtained from centrifugation of a solution containing Lys VI-stabilized Au_8 clusters and 125 μM TGA.

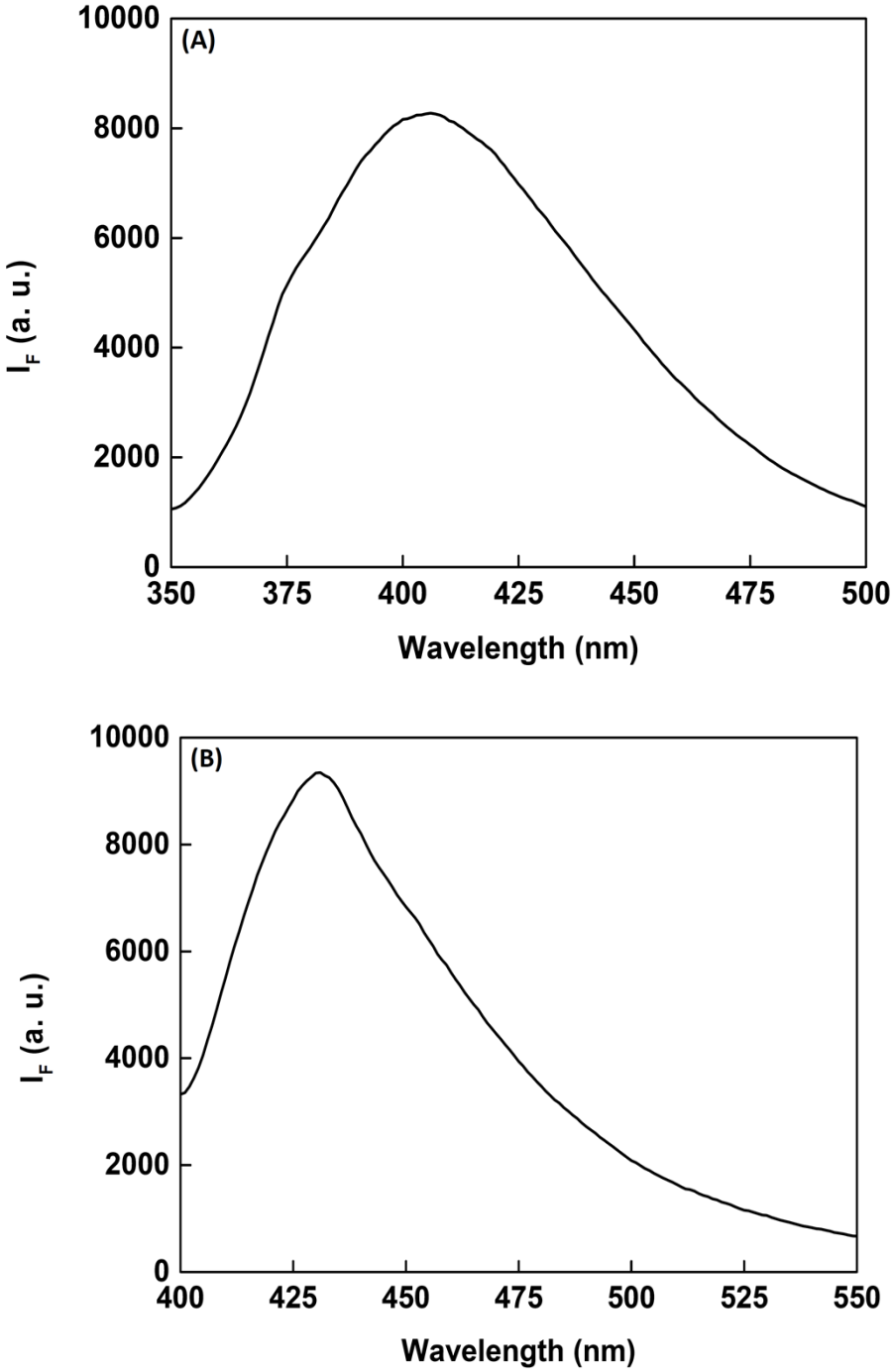

Figure S4. Fluorescence spectra of (A) BSA- and (B) ovalbumin-stabilized AuNCs. The excitation wavelengths are (A) 330 nm and (B) 375 nm.

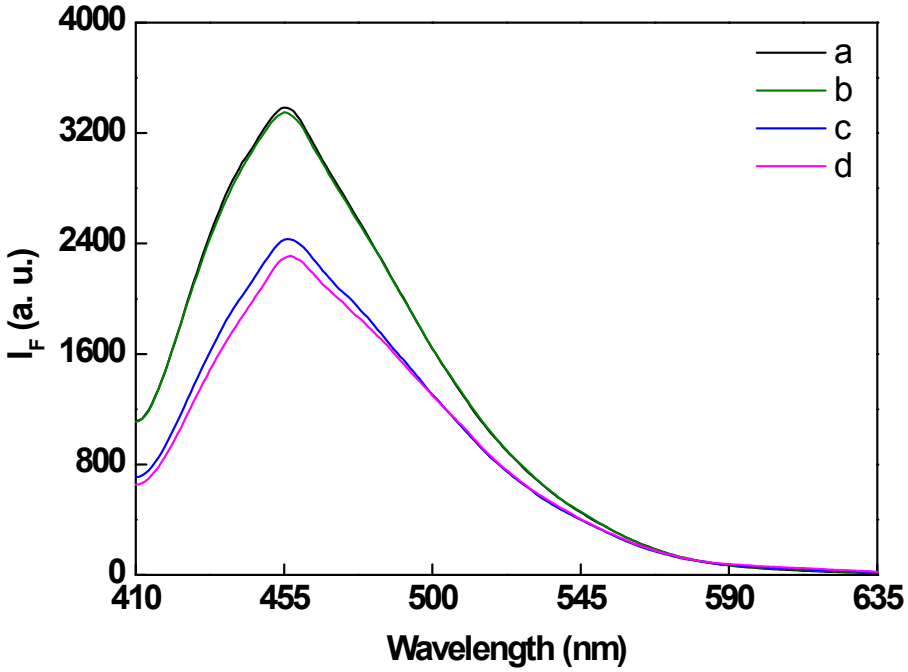

Figure S5. Fluorescence spectra of Lys VI-stabilized Au_8 clusters (a) before and (b-d) after the addition of (b) 100 μM EtHg, (c) 100 μM TSA, and (d) 100 μM thimerosal. The incubation time is 20 min.

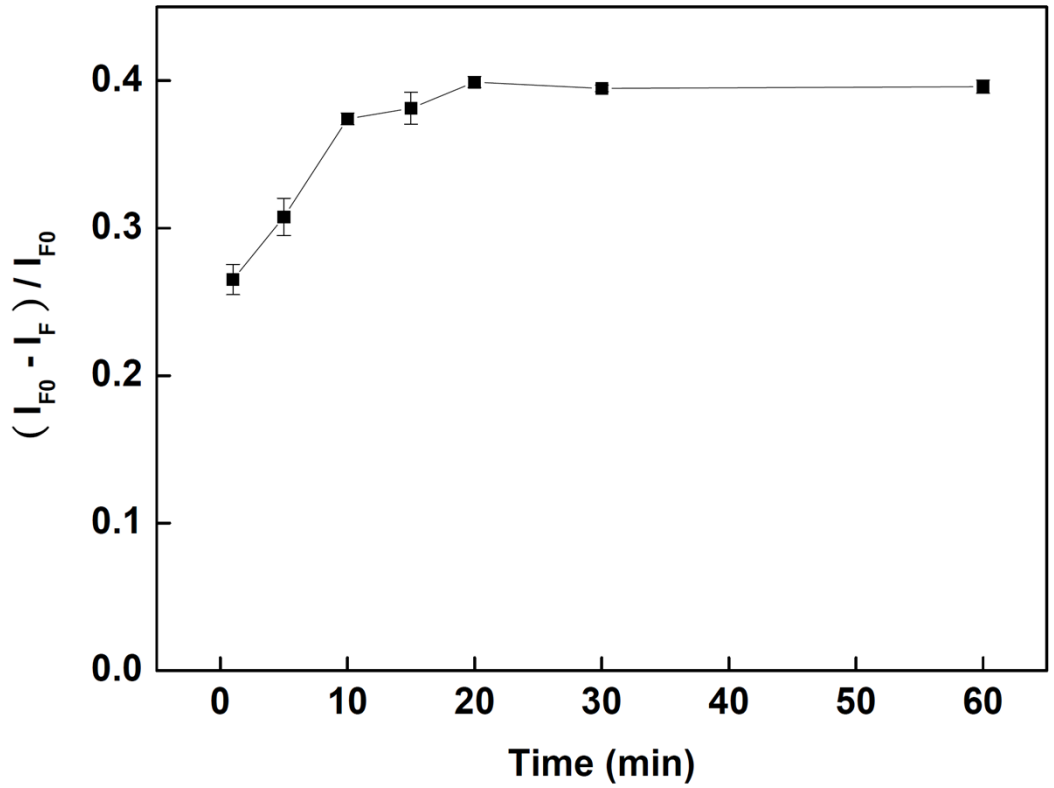

Figure S6. Time-course measurements of fluorescence intensity at 455 nm of a solution containing Lys VI-stabilized Au_8 clusters and 100 μM thimerosal.

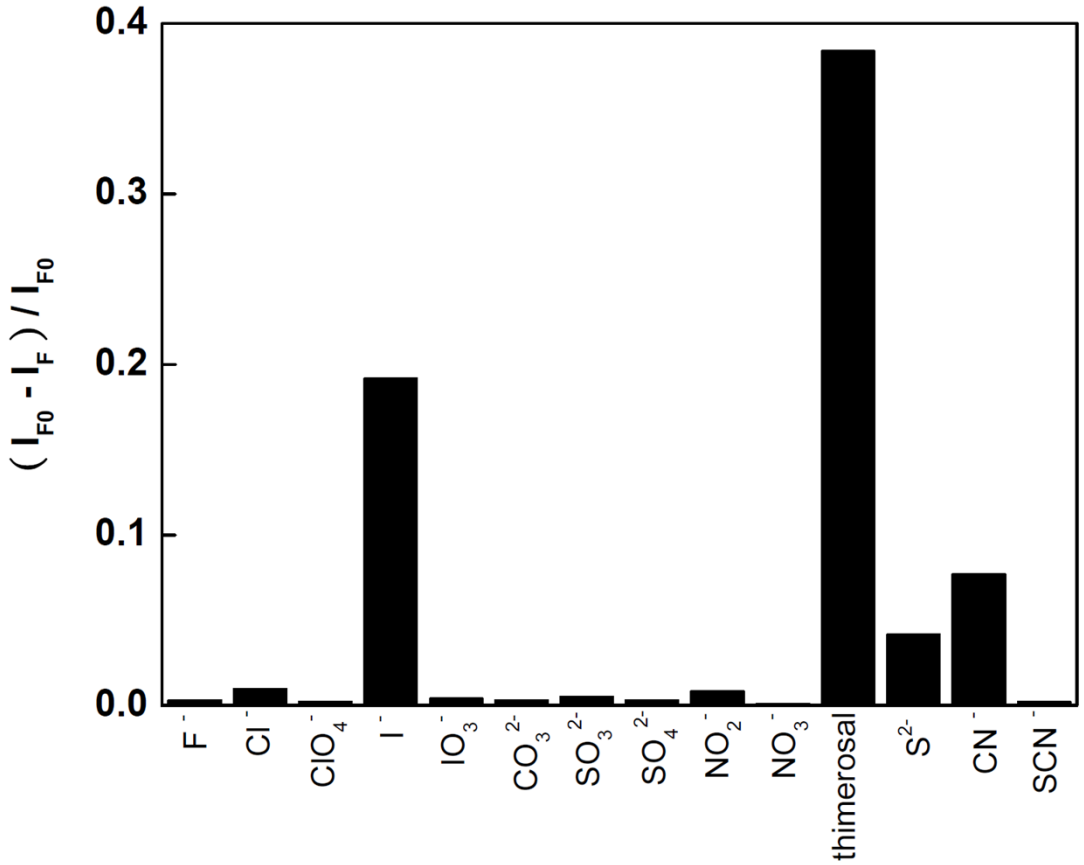

Figure S7. The $(I_{F0} - I_F)/I_{F0}$ value at 455 nm of Lys VI-stabilized Au_8 clusters after the addition of 100 μM anions and thimerosal. The incubation time is 20 min.

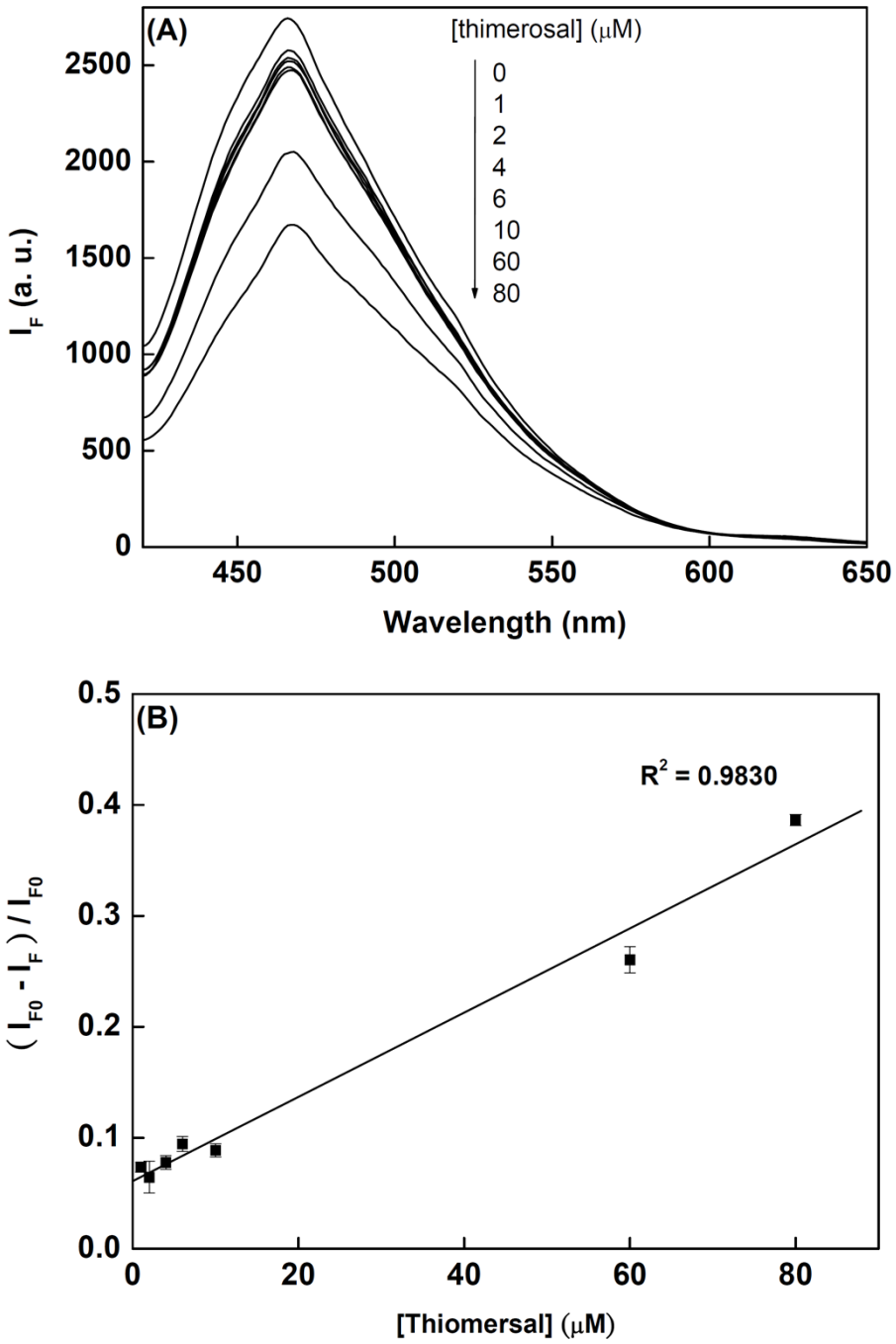

Figure S8. (A) Fluorescence spectra obtained from the addition of thimerosal-spiked vaccine sample to a solution of Lys VI-stabilized Au_8 clusters. The incubation time is 20 min. (B) A plot of the $(I_{F0} - I_F)/I_{F0}$ value at 455 nm *versus* the spiked concentration of thimerosal. The error bars represent standard deviations based on three independent measurements.

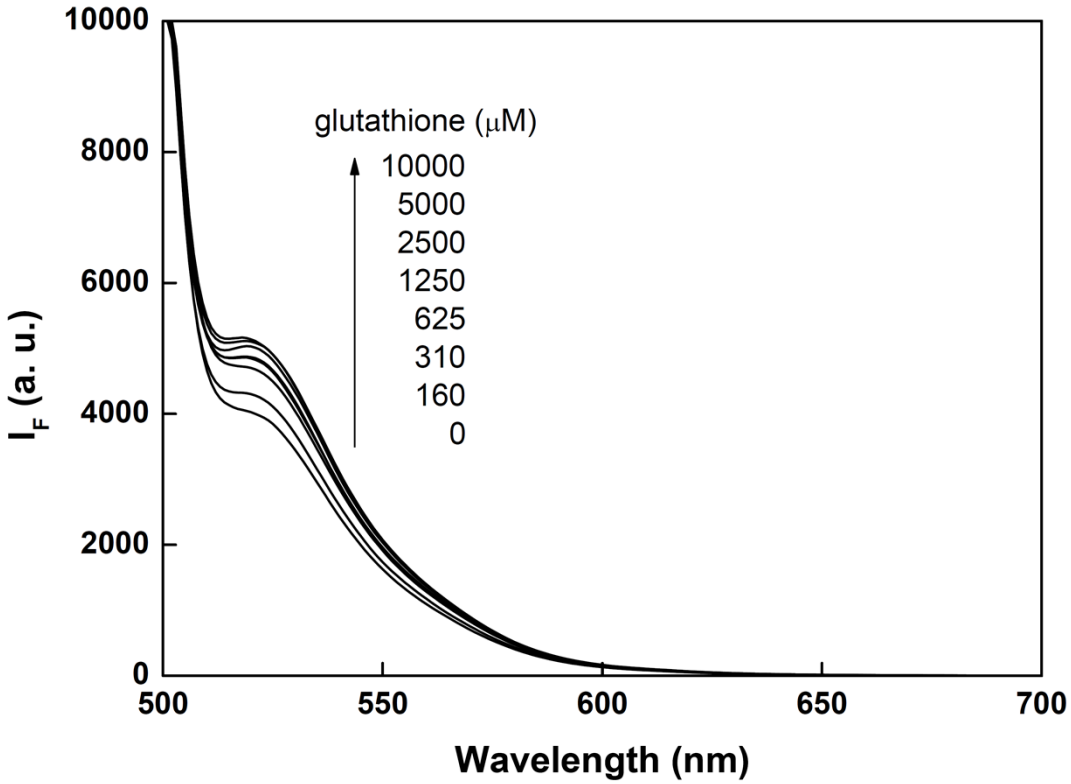

Figure S9. Fluorescence spectra of fluorescein obtained from the use of EnzChek Lysozyme Assay Kit for measuring the activity of Lys VI-stabilized Au8 clusters in the presence of 0–10 mM glutathione.

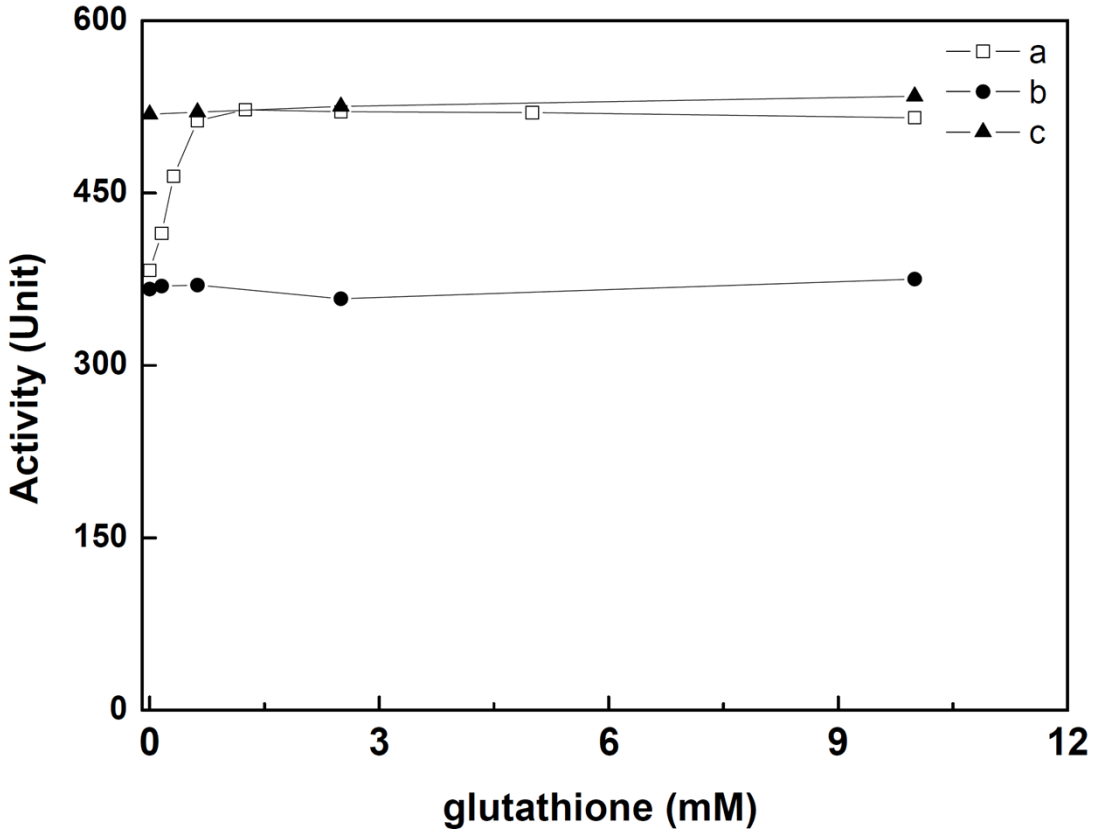

Figure S10. The activity of (a) Lys VI-stabilized Au_8 clusters at pH 2.0, (b) Lys VI at pH 2.0, and (c) Lys VI at pH 7.5 in the presence of different concentrations of glutathione.