Supplementary Materials

Microwave-assisted synthesis of BSA-stabilised gold nanoclusters for sensitive and selective detection of lead (II) and melamine in aqueous solution

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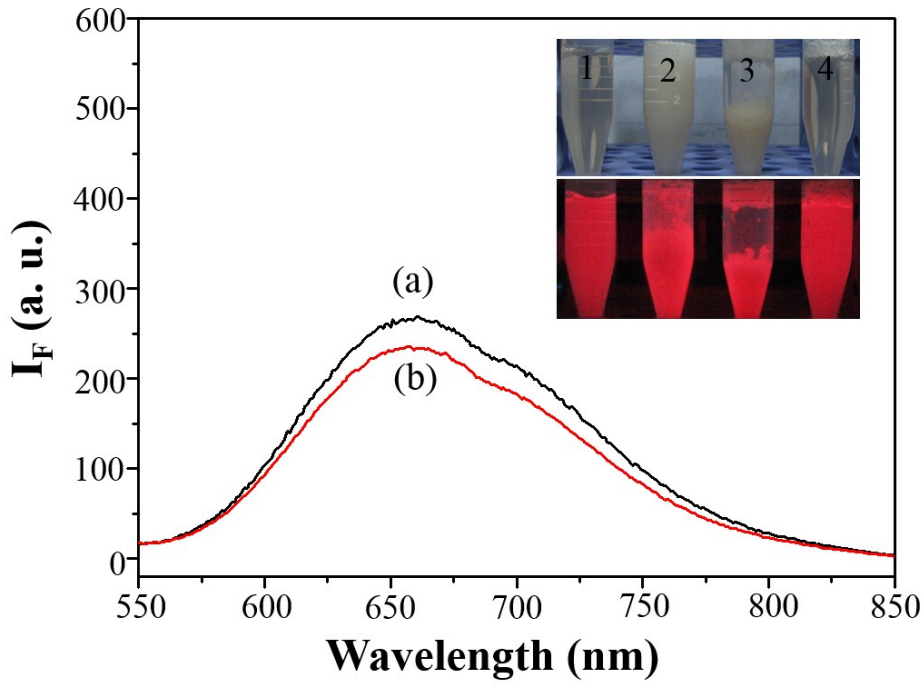

Figure S1. Fluorescence spectra of (a) freshly prepared and (b) redispersed solutions of MW_BSA-AuNCs. The inset displays photographs of MW_BSA-AuNCs under different conditions: (1) dissolved in a pH 7.0 PB buffer solution, (2) added to a pH 4.7 acetic buffer solution, (3) precipitated in the acetic buffer solution, and (4) completely redissolved in a pH 9.0 PB buffer solution. The top and bottom images were taken under daylight and UV light (λ_{ex}: 365 nm), respectively.

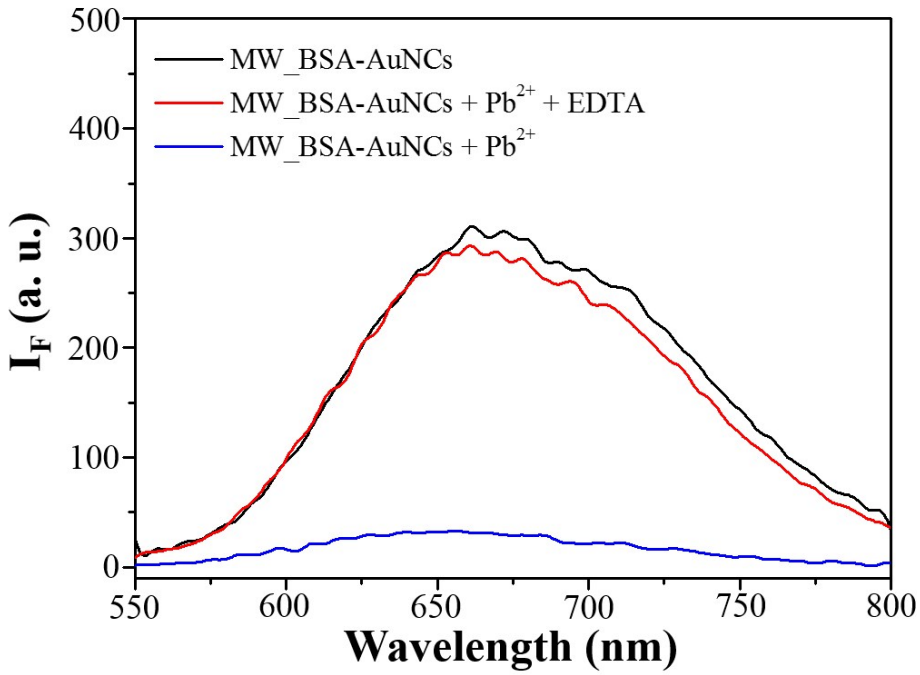

Figure S2. Fluorescence spectra of the MW_BSA-AuNCs (black curve) after adding 1 μM Pb^{2+} (blue curve), and followed by adding 100 μM EDTA (red curve).

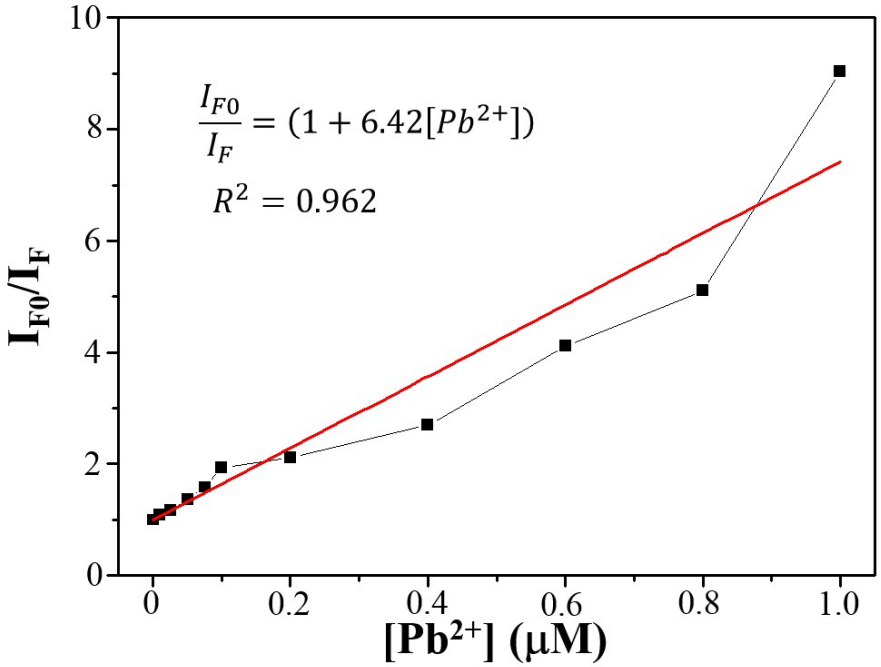

Figure S3. Stern–Volmer plot for fluorescence quenching of MW_BSA-AuNCs in the presence of Pb^{2+} ions.

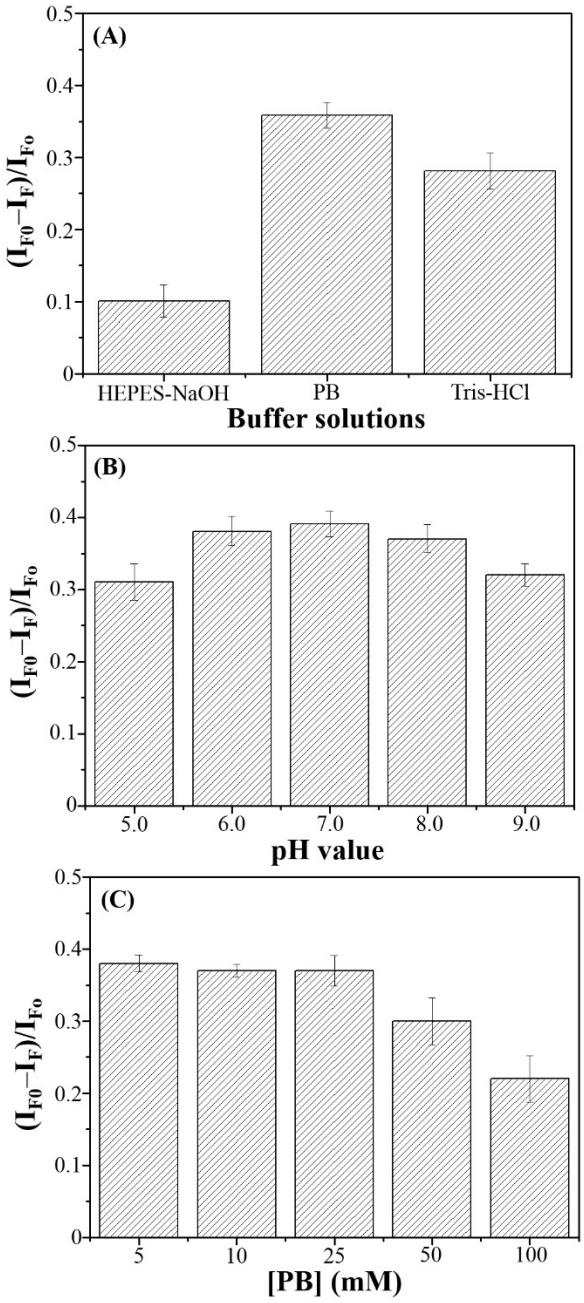

Figure S4. Values of $(I_{F0} - I_F)/I_{F0}$ for the responses of (A) different buffer solutions, (B) the pH values, and (C) the concentrations of buffer solutions (PB buffer) for Pb^{2+} ion sensing. The error bars in the inset represent the standard deviations from three repeated experiments.

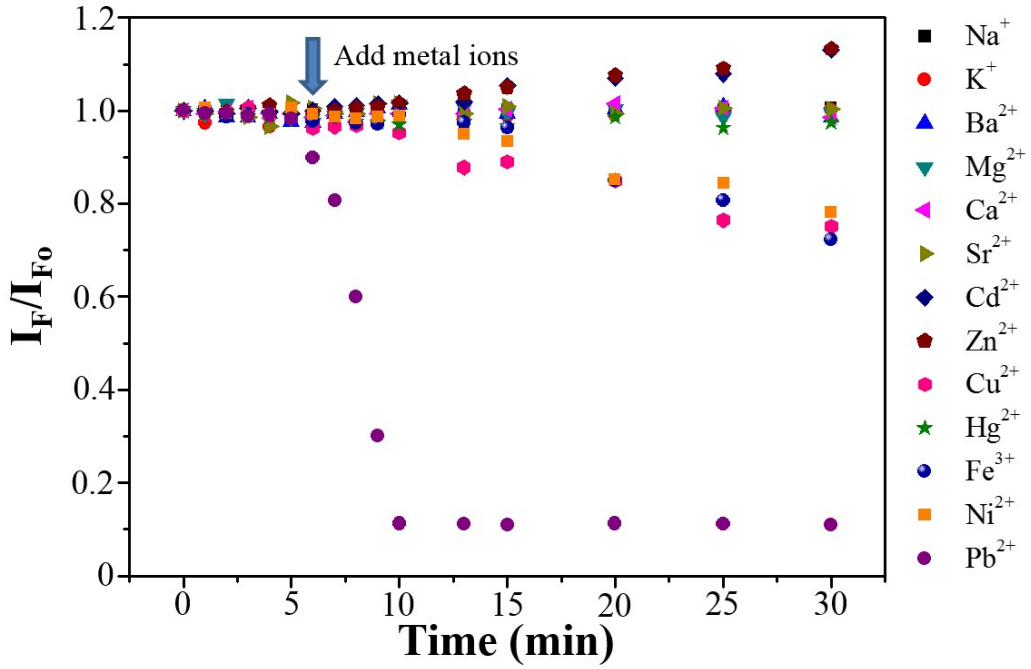

Figure S5. Plots of time-dependent fluorescence ratios (I_F/I_{F0}) of MW_BSA-AuNCs with metal ions in the presence of melamine.

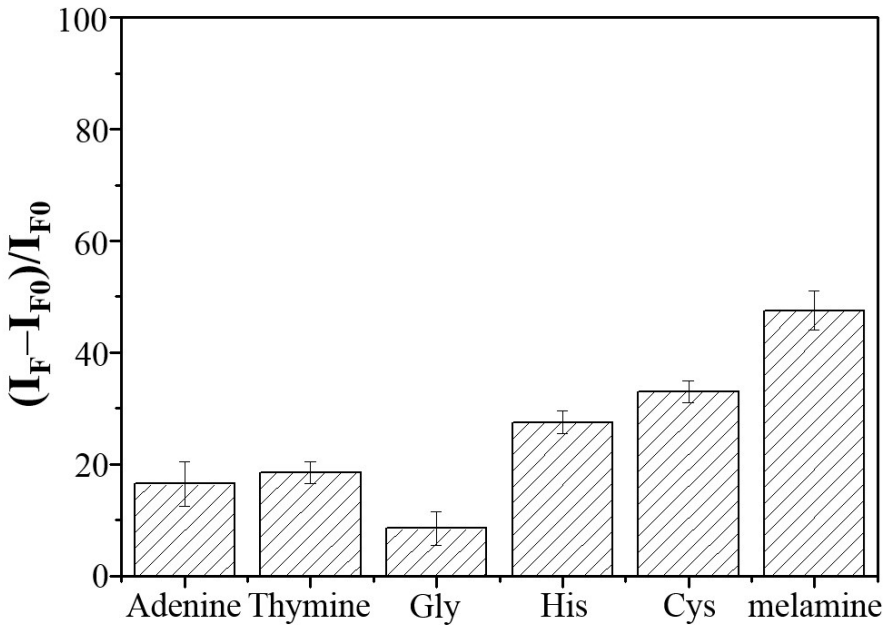

Figure S6. The selectivity of the MW_BSA-AuNCs-Hg^{2+} toward melamine. The concentration of melamine and other interferences were 200 μM. The error bars represent the standard deviations from three repeated experiments.