

## Supplementary Materials

# Tripeptide-Assisted Gold Nanocluster Formation for Fe<sup>3+</sup> and Cu<sup>2+</sup> Sensing

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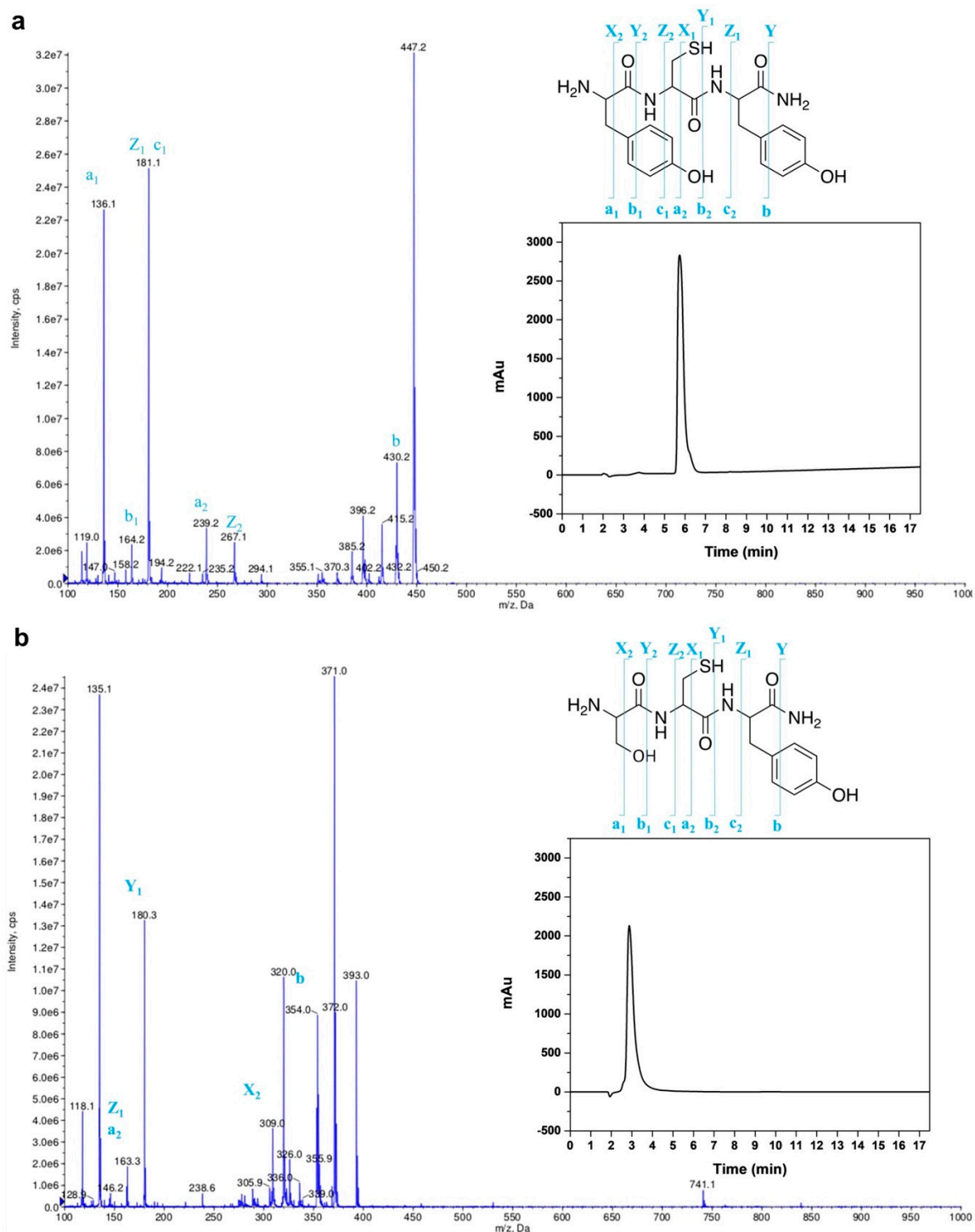
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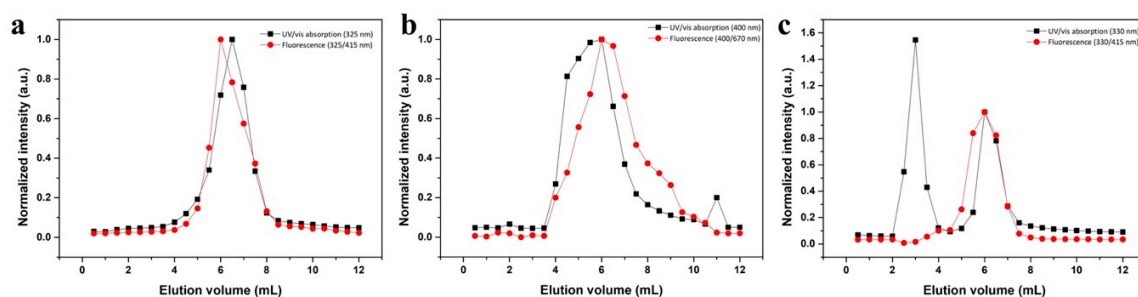
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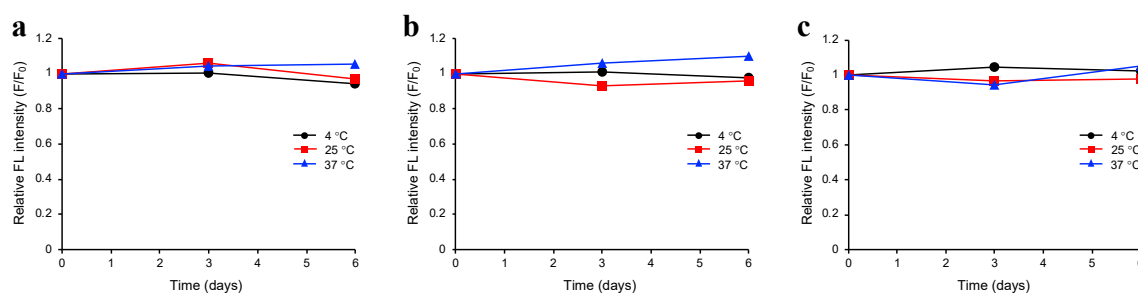
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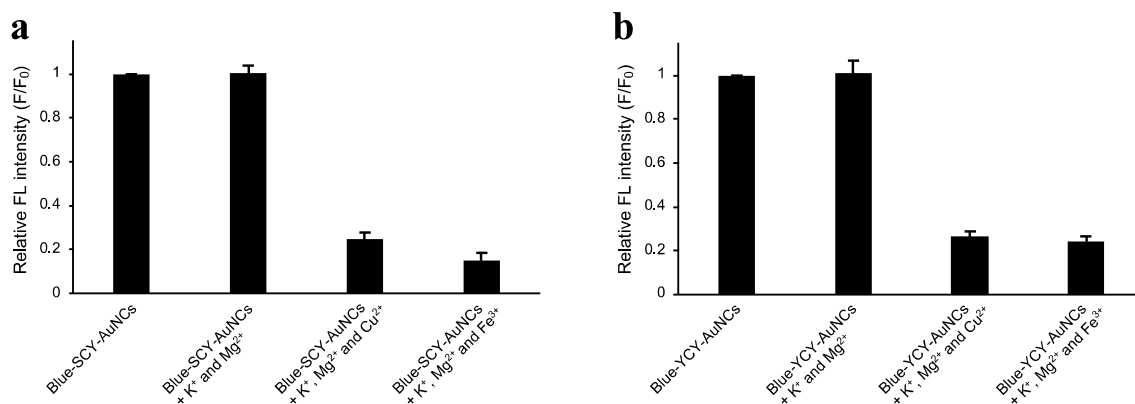
**Figure S1.** HPLC-MS/MS of (a) YCY and (b) SCY. Insets show analytical HPLC chromatogram of each peptide. LC gradient for YCY: 0% to 30% acetonitrile over 20 min, LC gradient for SCY: 0% acetonitrile over 20 min.



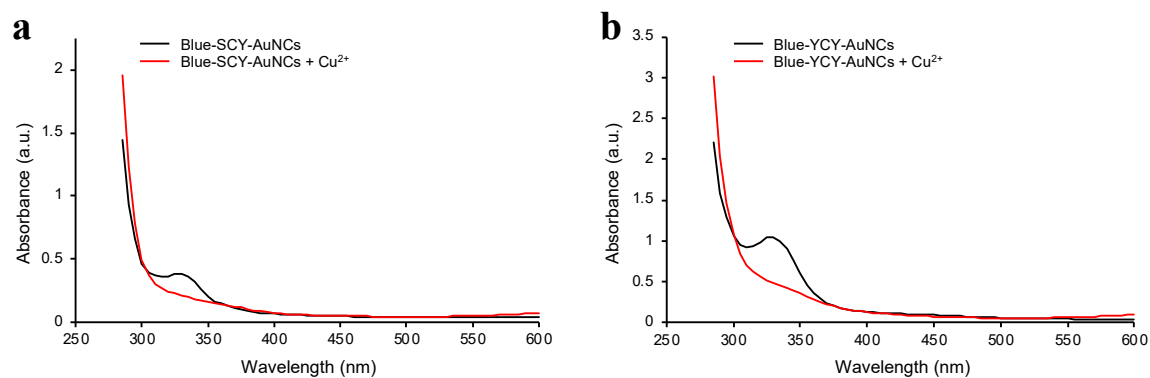
**Figure S2.** UV-Vis absorption and fluorescence intensity of the fractions from the size exclusion chromatography (Sephadex<sup>TM</sup> G-25): (a) Red-YCY-AuNC, (b) Blue-YCY-AuNC, and (c) Blue-SCY-AuNC.



**Figure S3.** Fluorescence intensity of the AuNC solutions over time at 4 °C, 25 °C and 37 °C: (a) Blue-SCY-AuNC ( $\lambda_{\text{ex}}$ : 325 nm,  $\lambda_{\text{em}}$ : 415 nm), (b) Blue-YCY-AuNC ( $\lambda_{\text{ex}}$ : 325 nm,  $\lambda_{\text{em}}$ : 415 nm), and (c) Red-YCY-AuNC ( $\lambda_{\text{ex}}$ : 400 nm,  $\lambda_{\text{em}}$ : 675 nm).



**Figure S4.** Fluorescence quenching of Blue-SCY-AuNC (a) and Blue-YCY-AuNC (b) by Cu<sup>2+</sup> (50  $\mu$ M) and Fe<sup>3+</sup> (50  $\mu$ M) in the presence of K<sup>+</sup> (50  $\mu$ M) and Mg<sup>2+</sup> (50  $\mu$ M). Fluorescent emission at 415 nm was measured with 325 nm excitation.



**Figure S5.** UV-Vis absorption spectra of Blue-SCY-AuNC (a) and Blue-YCY-AuNC (b) in the presence or absence of Cu<sup>2+</sup> ions (50  $\mu$ M). The effect Fe<sup>3+</sup> ions on UV-Vis spectrum was not examined due to the spectral overlap of Fe<sup>3+</sup> ions and the AuNCs.