 Highly Selective Detection of Histidine Using o-Phthaldialdehyde Derivatization

After the Removal of Aminothiols Through Tween 20-capped Gold Nanoparticles

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Electronic supplementary information (ESI) available: the optimal conditions for the derivatization of histidine with OPA
Figure S1. Effect of histidine concentration on the removal of histidine with Tween 20-AuNPs. The supernatant was obtained by centrifugation of a solution containing 5-100 μM histidine, 48.0 nM Tween 20-AuNPs and 0.1 mM CTAB. Then, the supernatant was derivatized with a solution of 1 mM OPA and 0.05 M NaOH. After 10 min, the fluorescence intensity (IF) of OPA derivatives was measured by excitation at 360 nm.
Figure S2. The effect of NaOH on the OPA derivatization of histidine. The supernatant was obtained by centrifugation of a solution of 10 μM histidine, 48.0 nM Tween 20-AuNPs and 0.1 mM CTAB. Then, the supernatant was derivatized with a solution of 1 mM OPA and 0–0.1 M NaOH. Tween 20-AuNPs were prepared in 40 mM phosphate solution at pH 2.0. The excitation wavelength was set at 360 nm.
Figure S3. The time evolution of fluorescence intensity of OPA-derivatized histidine. The supernatant was obtained by centrifugation of a solution of 10 μM histidine, 48.0 nM Tween 20-AuNPs and 0.1 mM CTAB. Then, the supernatant was derivatized with a solution of 1 mM OPA and 0.04 M NaOH. Tween 20-AuNPs were prepared in 40 mM phosphate solution at pH 2.0. The excitation wavelength was set at 360 nm.