

Supplementary Data

Title: Hydrogen bonding-induced color recovery of gold nanoparticles upon conjugation of amino acids

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1. Preparation and characterization of gold nanoparticle aggregates
2. **Time-dependent UV-vis data**
3. **Dynamic light scattering measurements**



1. Preparation and characterization of gold nanoparticle aggregates

Figure S1 shows representative images of gold nanoparticles before and after the modification with the NHS group and bioconjugation.

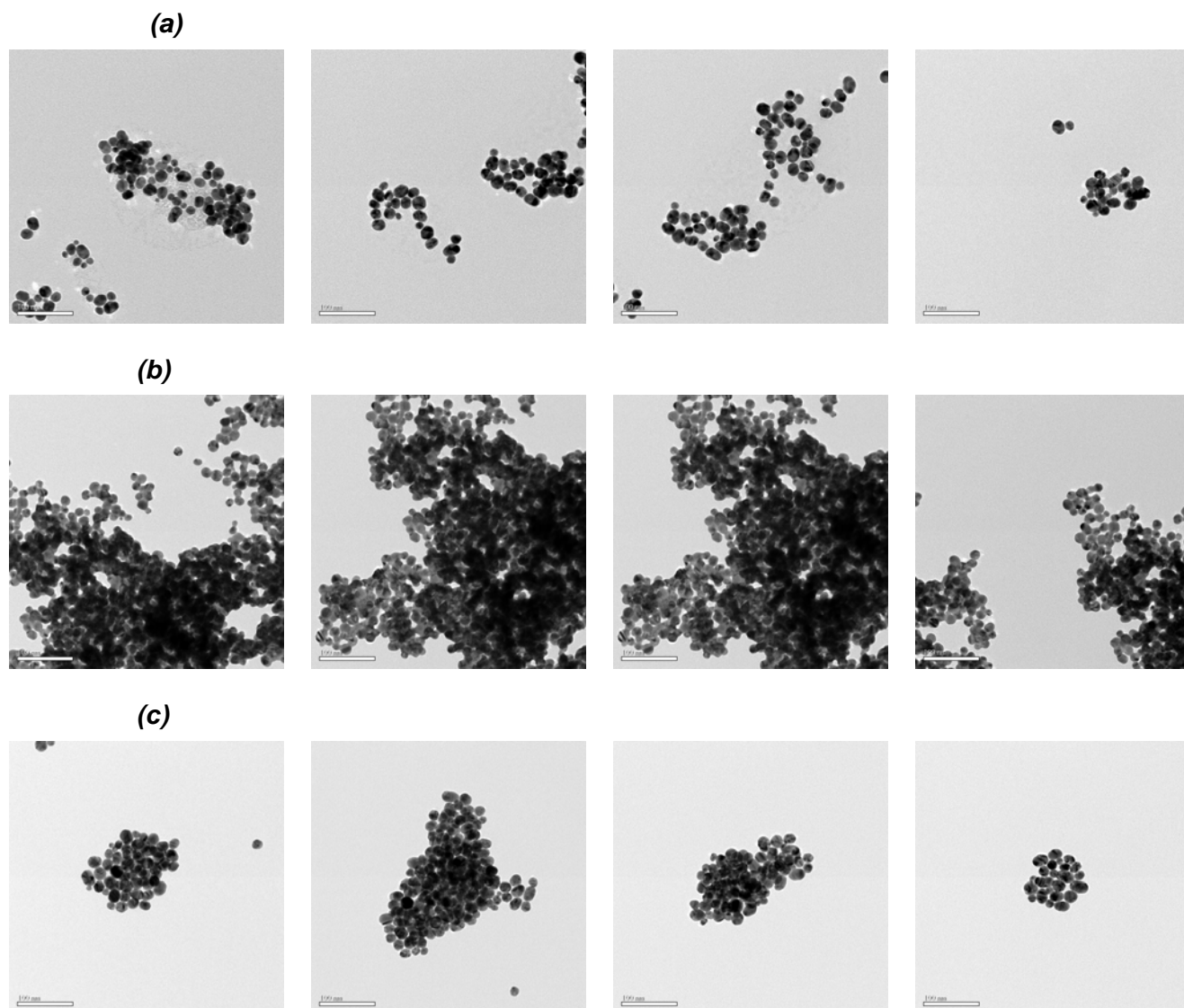


Figure S1. TEM images of (a) pristine, (b) DPAN-coated Au nanoparticles, and (c) Conjugation of tyrosine amino acid onto DPAN-coated Au nanoparticles. The scale bar indicates ~100 nm.

2. Time-dependent UV-vis data

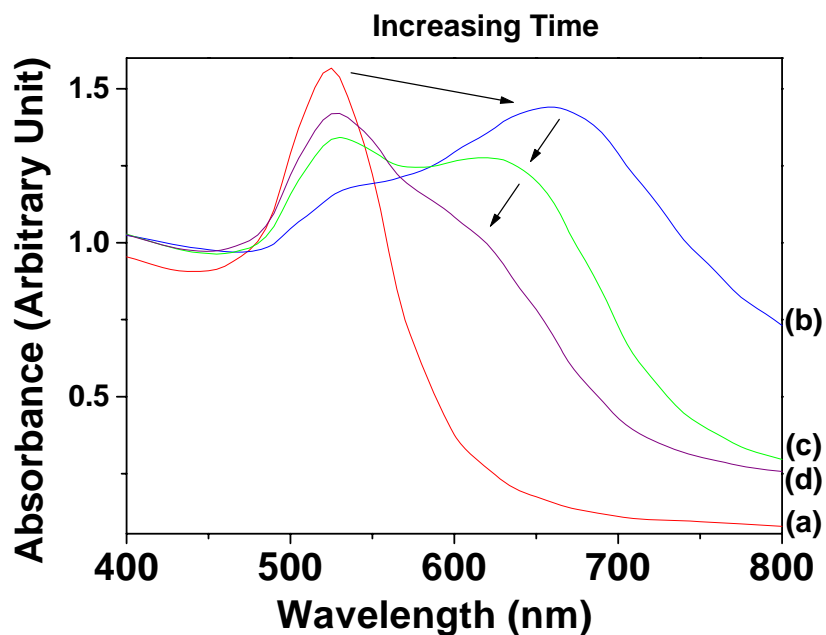


Figure S2. Time dependence of UV-Vis absorbance spectral change of citrate reduced-Au NPs before (a) and (b) after the addition of DPAN onto citrate-reduced Au NPs. The recovery after the addition of tyrosine of $\sim 10^{-3}$ M into the DPAN-coated Au NPs at an elapsed time of ~ 3 min and (d) ~ 45 min.

3. Dynamic Light Scattering Measurements

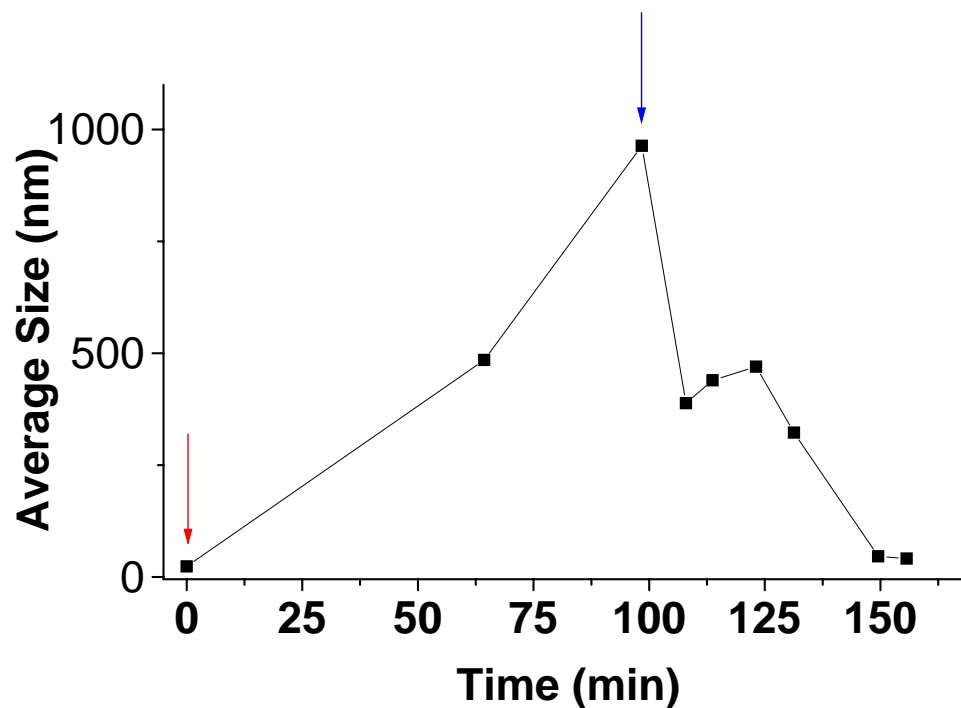


Figure S2. Time evolution of particle diameters from dynamic light scattering (DLS) data. The first red arrow indicates the addition of DPAN into Au nanoparticles. The second blue arrow indicates the addition of glycine onto DPAN-coated Au nanoparticle solution. The results clearly showed that the average size became recovered with 2 hrs upon addition of amino acids onto the NHS terminated Au nanoparticles.