

## **Supporting Information**

# **Functionality of Nonfunctional Diluent Ligands within Bicomponent Layers on Nanoparticles**

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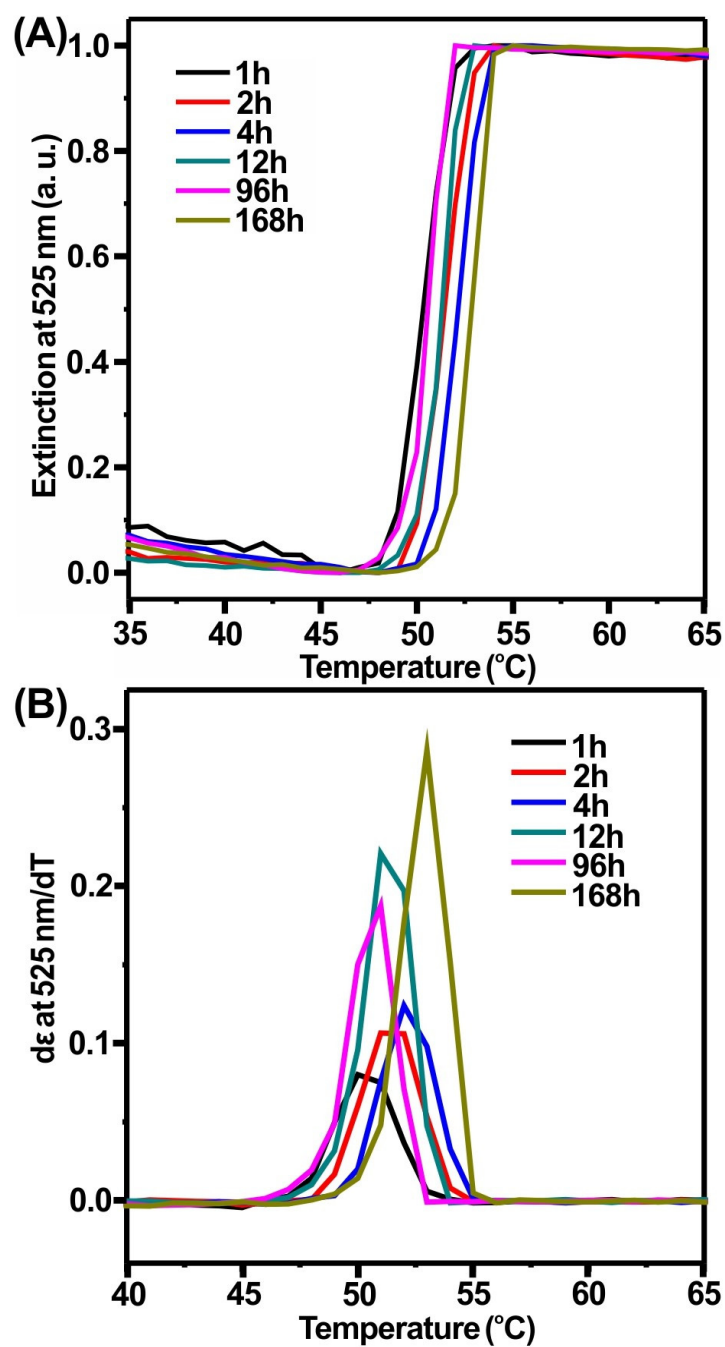


Figure S1. (A) Melting profiles of the hybridized DNA-AuNPs synthesized in the absence of HS-PEG (DNA 100%) over various conjugation time periods (1 h to 1 week) at 25 °C and (B) their first derivatives.

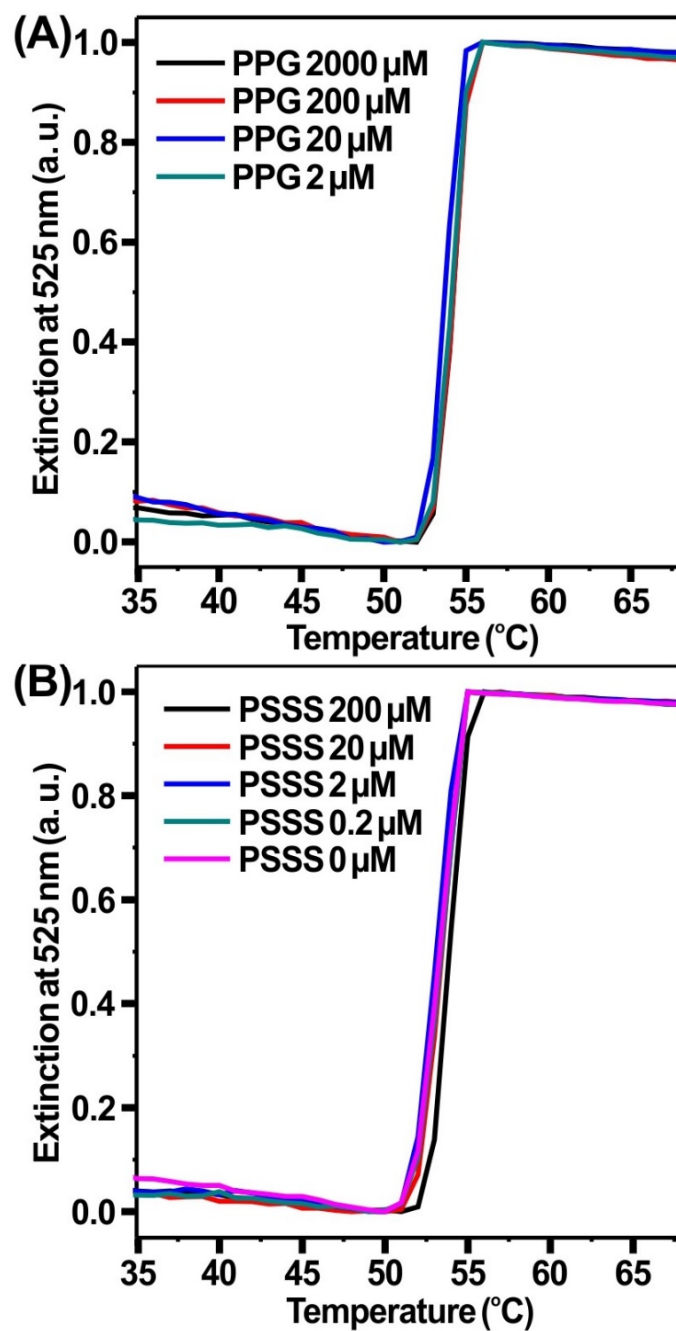


Figure S2. Melting profiles of the hybridized DNA-AuNPs synthesized with DNA and non-thiolated (A) poly(propylene glycol) (PPG) at various concentrations ranging from 2 to 2000  $\mu\text{M}$  and (B) poly(sodium 4-styrenesulfonate) (PSSS) at various concentrations ranging from 0.2 to 200  $\mu\text{M}$  for 6 h at 25  $^{\circ}\text{C}$ .

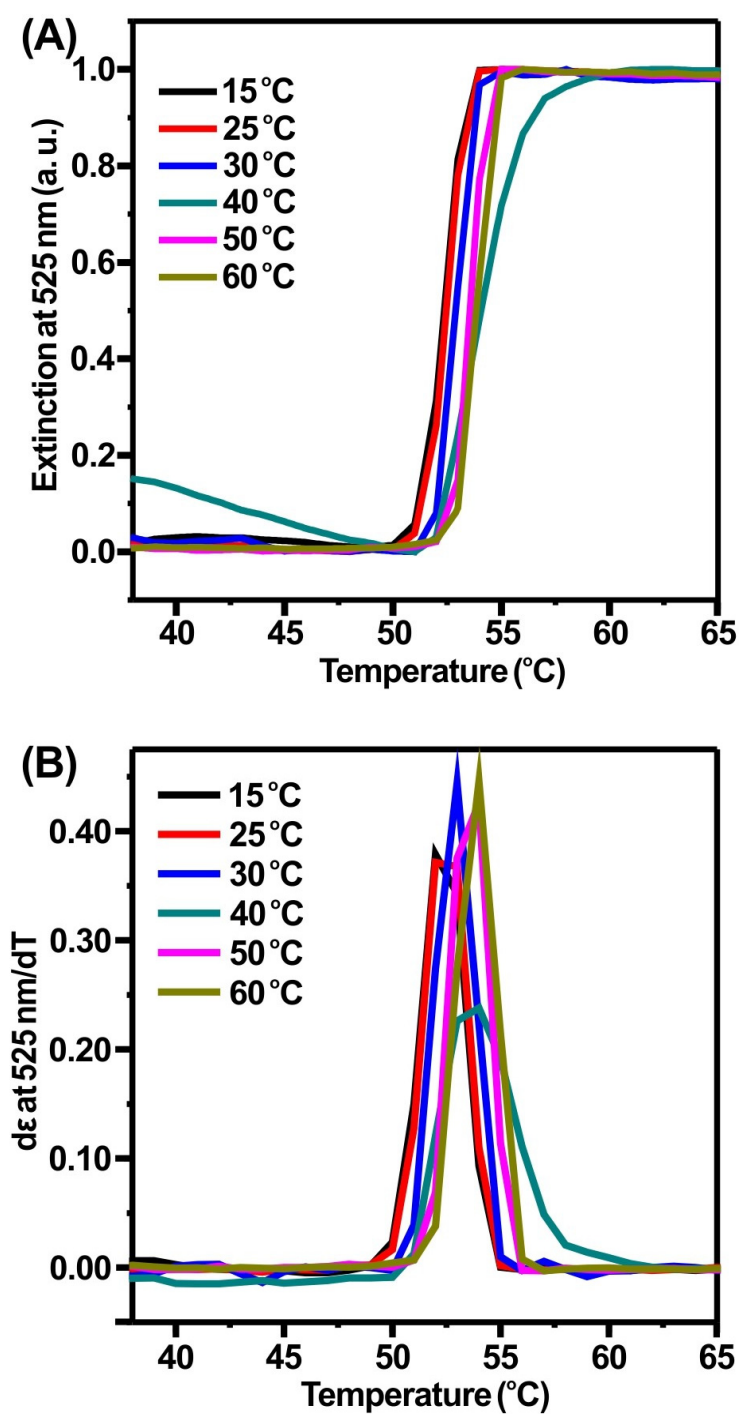


Figure S3. (A) Melting profiles of the hybridized DNA-AuNPs synthesized in the absence of HS-PEG (DNA 100%) at various conjugation temperatures (10 to 60 °C) for 9 h and (B) their first derivatives.

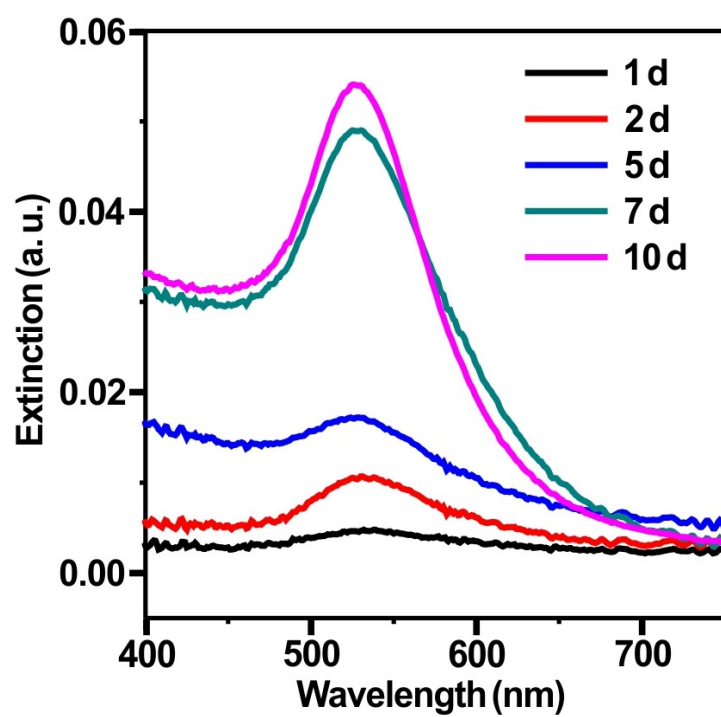


Figure S4. UV-vis spectra of DNA-AuNPs synthesized over various conjugation time periods (1 to 10 days) at 0.01 M  $\text{Na}^+$ .