Supplementary Information

A Novel Reflectance-based Aptasensor Using Gold Nanoparticles for the Detection of Oxytetracycline

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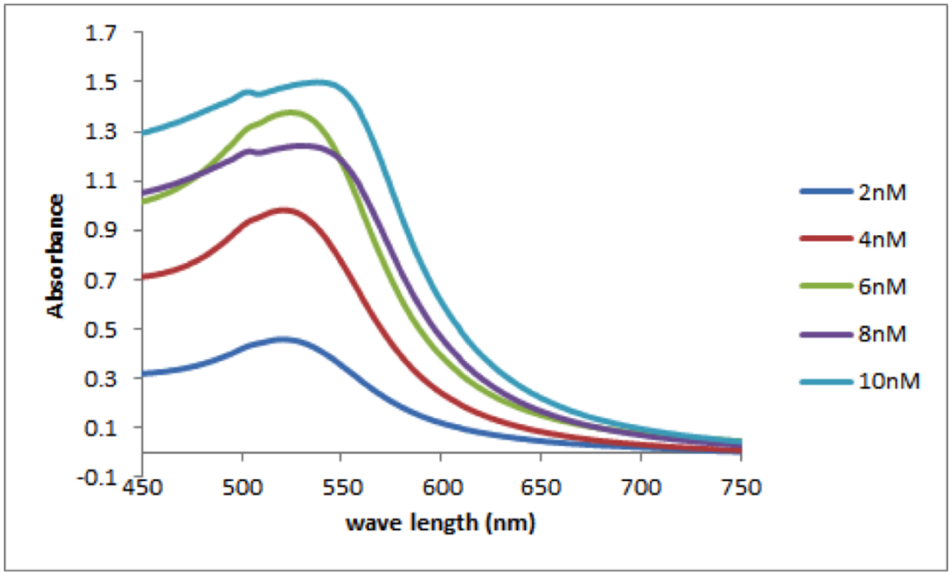
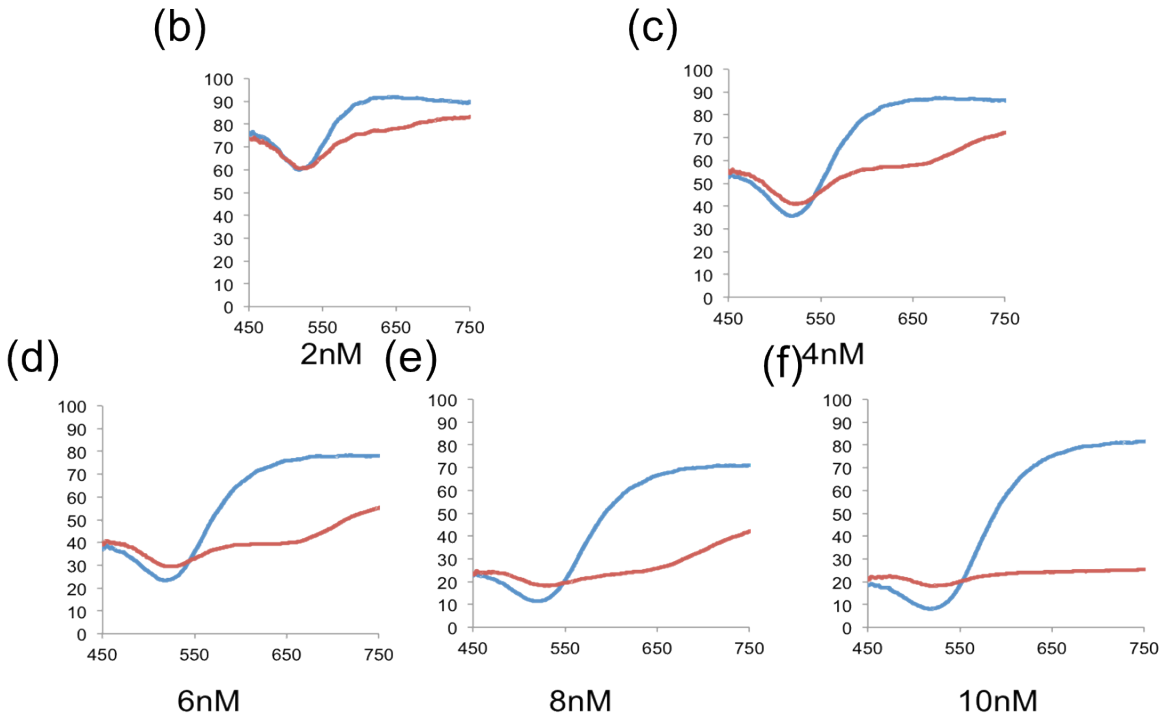
Supplementary data

S1. Absorbance spectrums and reflectance intensities for the AuNP solutions

We compared the absorbance signal with the reflectance signal (**Fig. S1**). In case of absorbance, the peak at 520 nm wavelength was unstable at 8 nM and 10 nM AuNPs concentrations (**Fig. S1 (a)**). However, in case of the reflectance, the peak (blue line, 520 nm wavelength) remained stable at 2, 4, 6, 8 and 10 nM AuNPs concentrations. The peak shifting from 520 to 650 nm after the aggregation of AuNPs was also observed at all samples (red line) (**Fig. S1 (b)~(f)**).

(a)





Figurer S1. The comparison of absorbance and reflectance systems: (a) the absorbance spectrum at different AuNP concentrations (2~10 nM) and (b-f) the relative reflectance intensity of AuNPs only (blue line) and AuNPs+salt (red line) at different AuNP concentrations of 2 nM, 4 nM, 6 nM, 8 nM, and 10 nM, respectively.

S2. TEM images for AuNPs

AuNP conditions in binding assay were analyzed by TEM Charicterization (**Fig. S2**). The AuNP concentration was 2nM and oxtetracycline concentrations are defferent from 0 to 25μM. The aggregation of AuNP increased as high target concentrations.

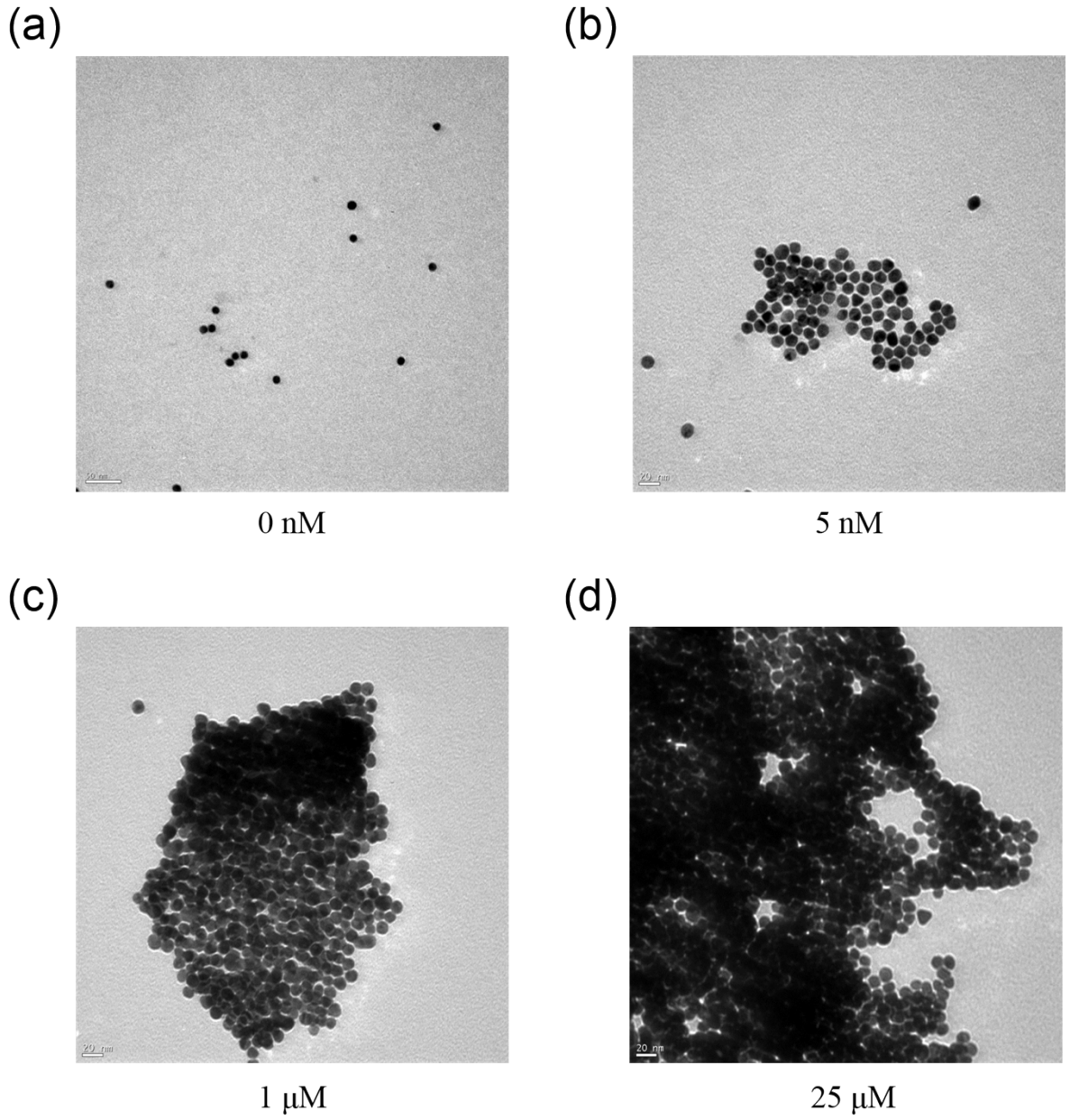


Figure S2. TEM characterization of AuNPs in different states (a) OTC 0 nM, scale bar 50 nm, (b) OTC 5 nM, scale bar 20 nm (c) OTC 1 μM, scale bar 20 nm (d) OTC 25 μM, scale bar 20 nm.