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)
**Figuer 1.** 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 Characterization (**Fig. S2**). The AuNP concentration was 2nM and oxtetracycline concentrations are different 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.