Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information:

Aptamer based surface enhanced Raman scattering detection of adenosine using various core sizes of Au-Ag core-shell nanoparticles

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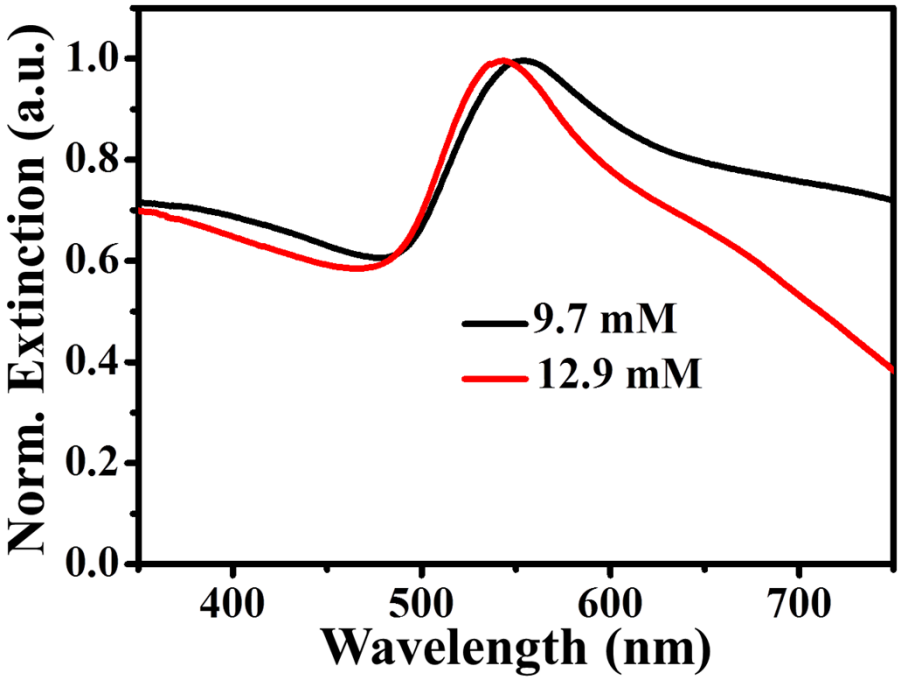

Figure S1. UV-vis spectra of Au NPs grown with 9.7 mM and 12.9 mM citrate solution, respectively.

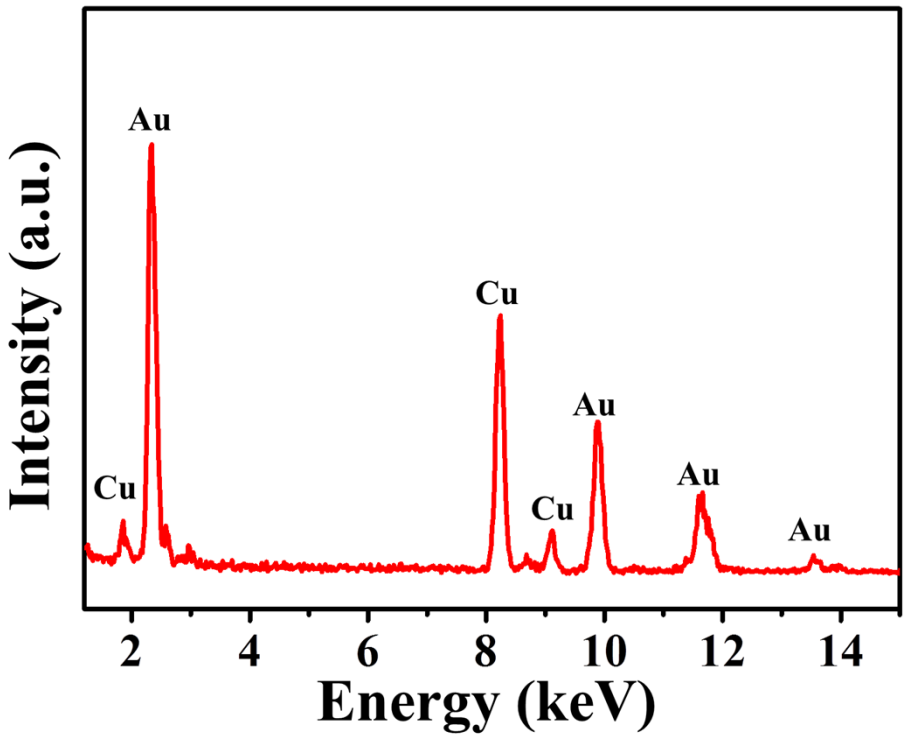

Figure S2. The EDS spectrum of Au NP.

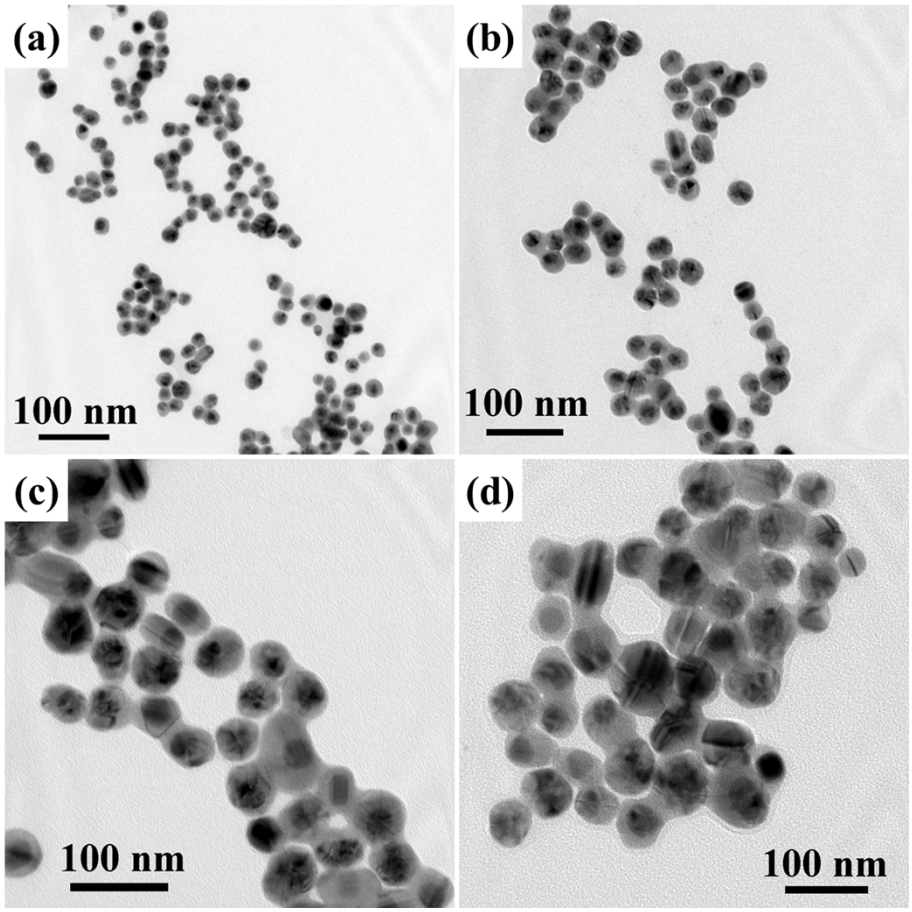

Figure S3. Low magnification TEM images of Au-Ag core-shell NPs synthesized on the different sizes of Au NP: (a) 13.1 nm, (b) 18.7 nm, (c) 23.4 nm, and (d) 29.5 nm.

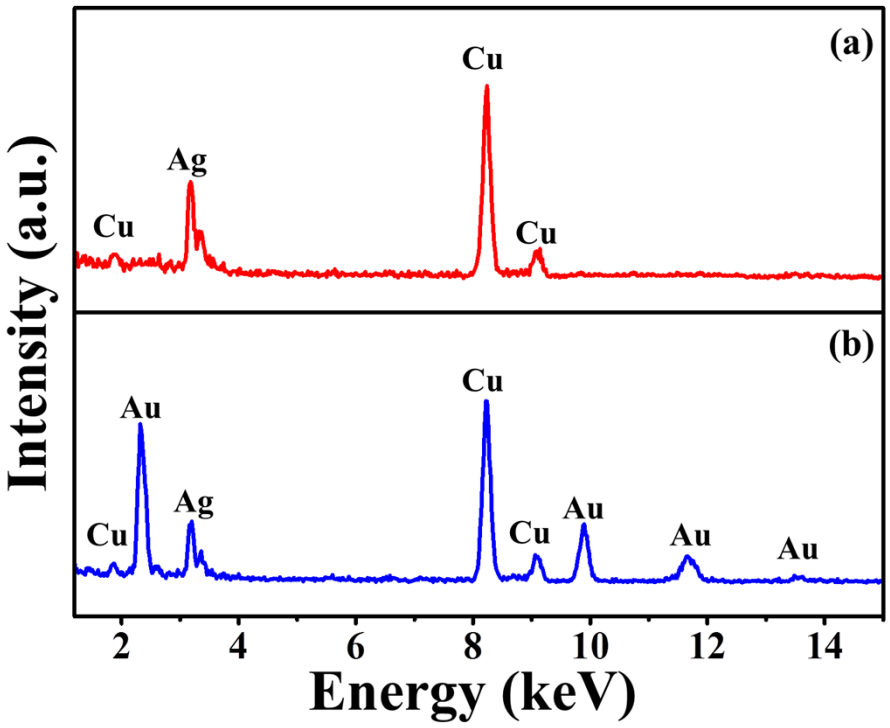

Figure S4. The EDS spectra of the a) side and b) center of Au-Ag core-shell NP.

Au NP Sizes (nm)	Average Diameters (nm)	Self-Assembly Time (min)	Density (μm^2)	Surface Coverage (%)
13.1	12.2±1.8	15	2356	27.5
18.7	17.5±2.7	30	1164	24.9
23.4	20.1±3.5	60	723	22.9
29.5	26.8±5.1	100	396	22.3

Table S1. Average diameters and self-assembly conditions for the different sizes of Au NPs.

Core Sizes of Au-Ag Core-Shell NP (nm)	Average Diameters (nm)	Self-Assembly Time (min)	Density (μm^2)	Surface Coverage (%)
13.1	23.4±3.3	45	641	27.6
18.7	30.9±5.5	75	336	25.2
23.4	38.4±5.6	120	207	24.0
29.5	52.1±8.2	180	105	22.4

Table S2. Average diameters and self-assembly conditions for the different core sizes of Au-Ag core-shell NPs.

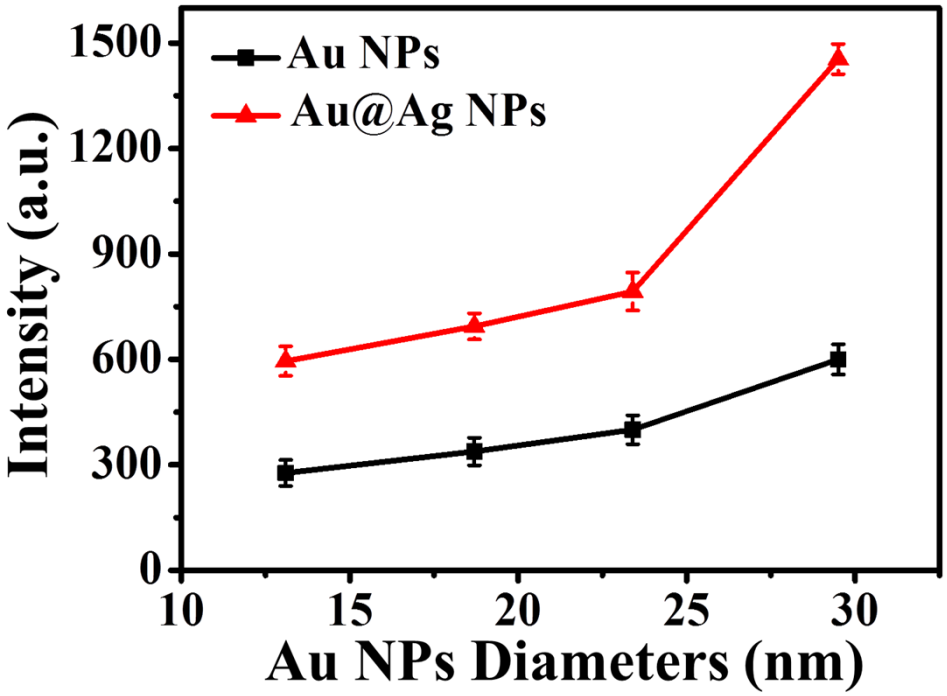

Figure S5. The maximum SERS intensity at 1646 cm^{-1} versus the different sizes of Au NPs.

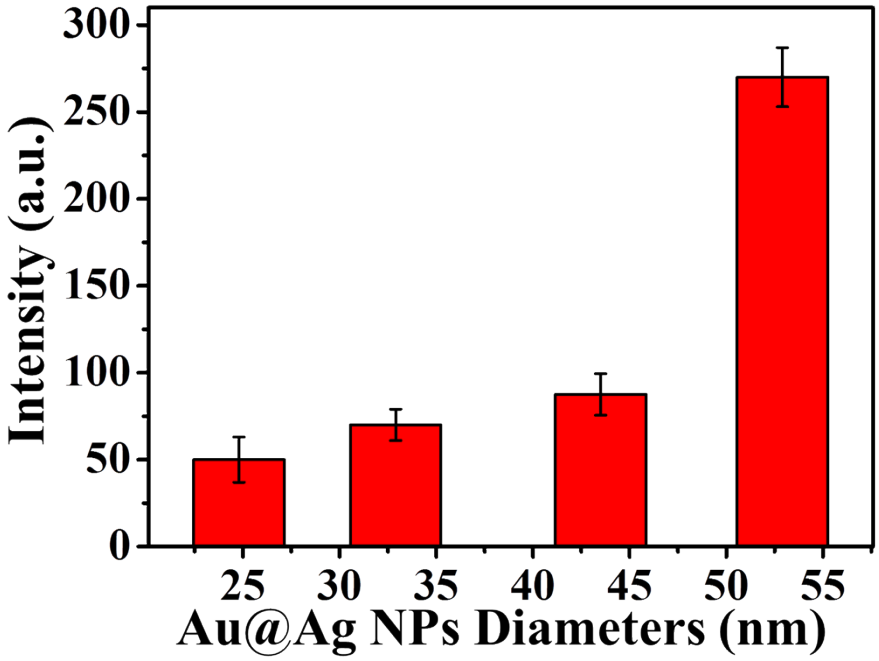

Figure S6. The SERS signals of the aptameric sensor at 1648 cm^{-1} versus the different sizes of Au-Ag core-shell NPs.

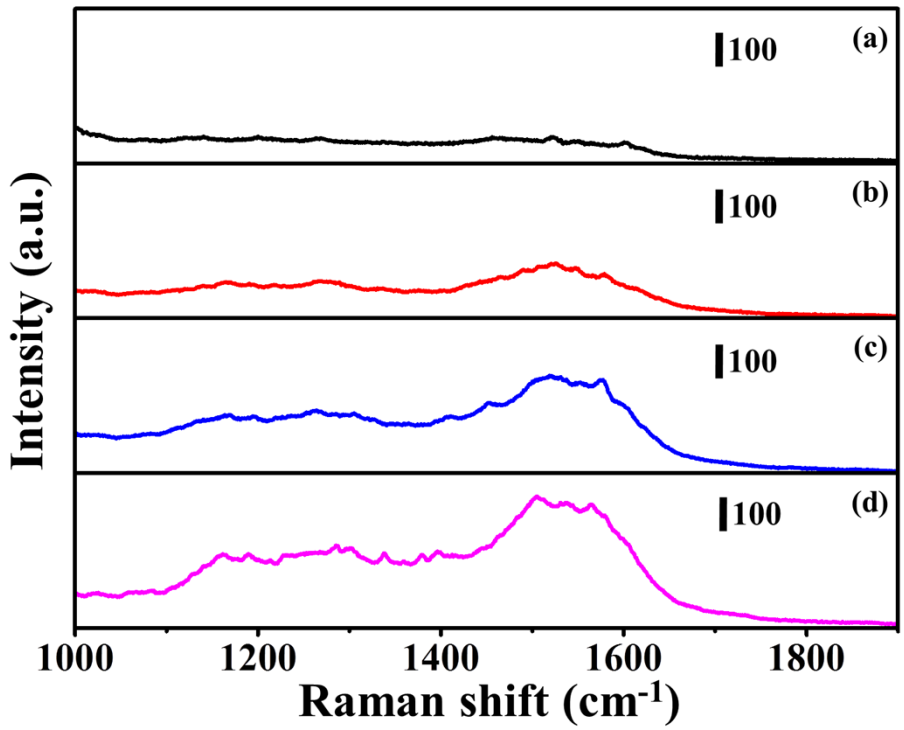

Figure S7. SERS spectra of the aptameric sensor on the silicon substrate with self-assembled the different sizes of Au NPs at $1x10^{-4}$ M adenosine: (a) 13.1, (b) 18.7 (c) 23.5 and (d) 29.5 nm.

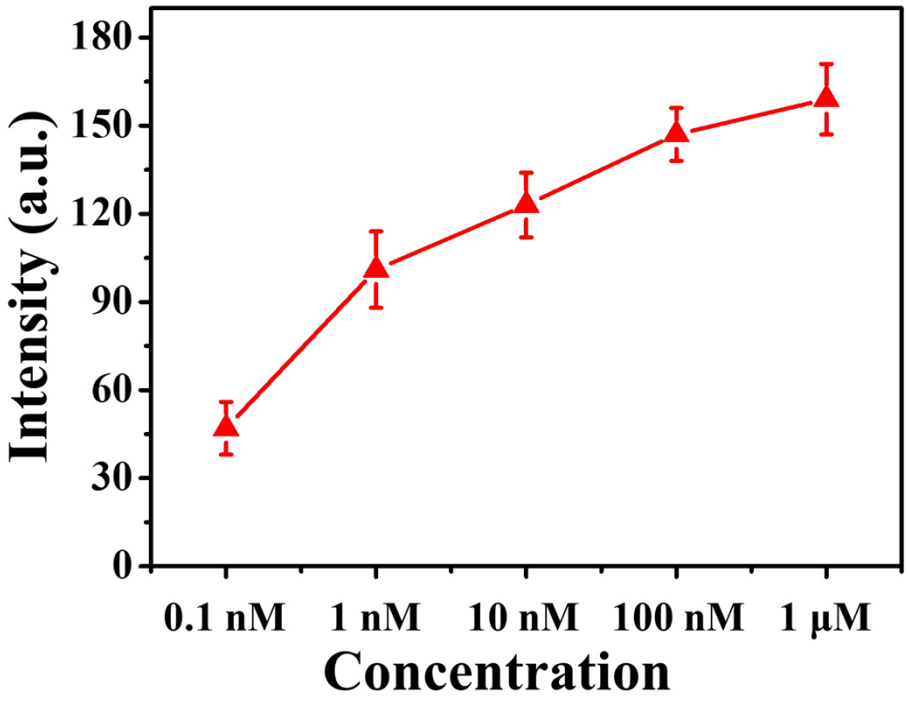

Figure S8. The SERS signals of the aptameric sensor at 1648 cm^{-1} versus the concentration of adenosine.