

Adenosine Triphosphate-Encapsulated Liposomes with Plasmonic Nanoparticles for Surface Enhanced Raman Scattering-Based Immunoassays

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The detection limit of liposome number in our system was 8×10^6 units. When we change the liposome unit number to mol, it is equal to 1.3×10^{-17} mol: $(8 \times 10^6 \text{ units}) \times (1 \text{ mol}/6.023 \times 10^{23} \text{ units}) = 1.3 \times 10^{-17} \text{ mol}$.

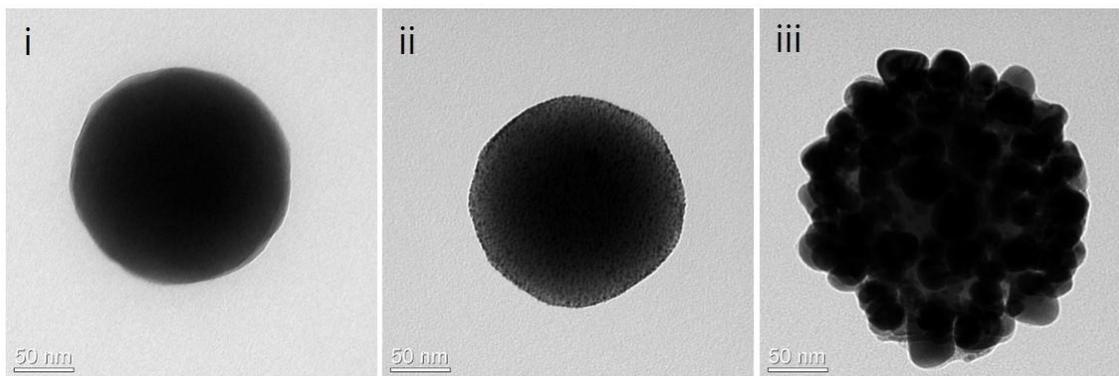


Figure S1. TEM images of (i) SiO₂, (ii) SiO₂@Au and SiO₂@Au@Ag nanoparticles synthesized at 200 μg SiO₂ and 300 μM AgNO₃.

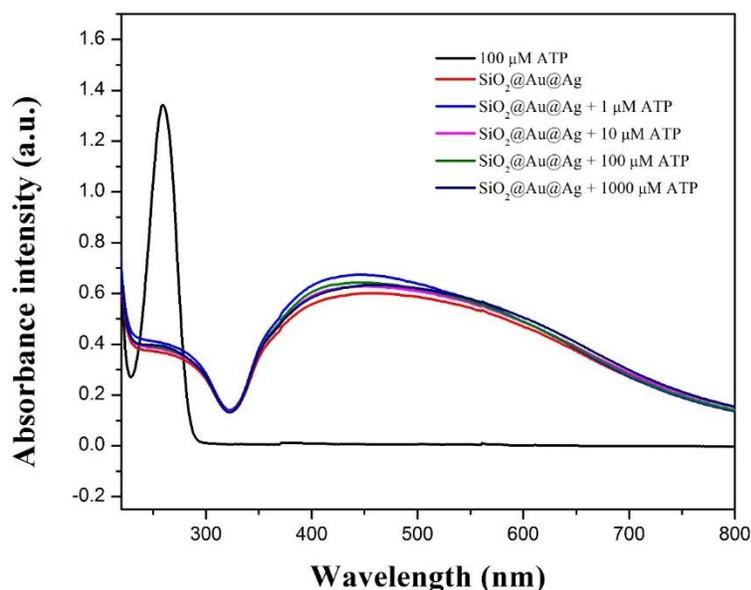


Figure S2. UV-Vis spectra of 100 μM adenosine triphosphate (ATP), SiO₂@Au@Ag in the presence of ATP in the range of 0 to 1000 μM. SiO₂@Au@Ag concentration is 10 μg/mL.

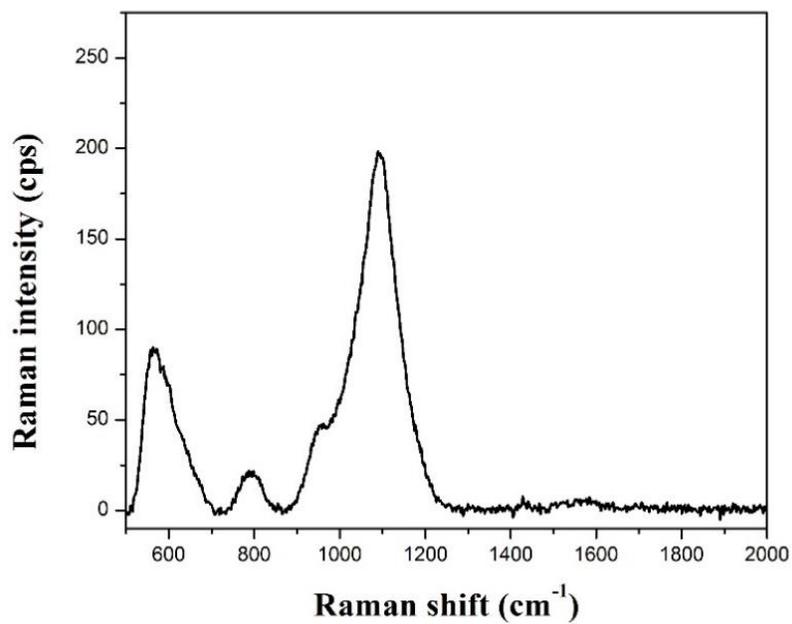


Figure S3. Raman spectrum of SiO₂@Au@Ag in solid state.

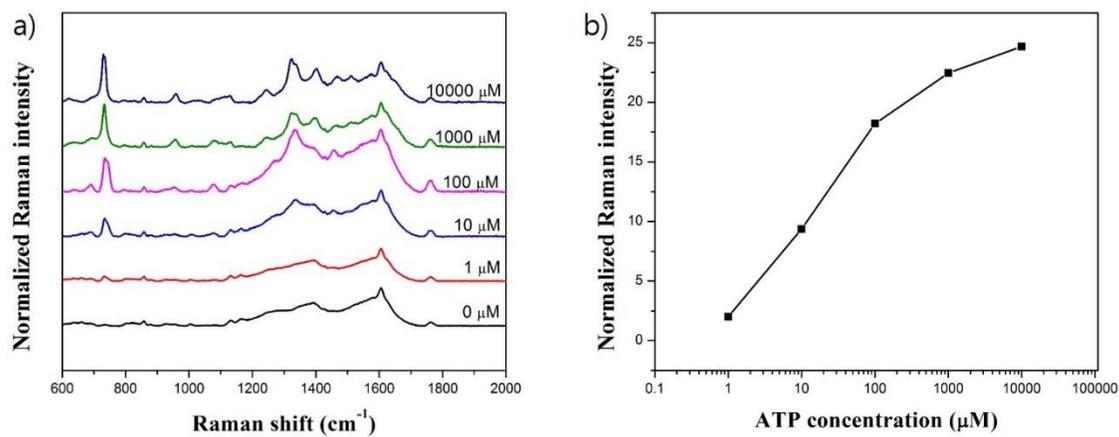


Figure S4. (a) Raman intensity and (b) calibration plot of SiO₂@Au@Ag in the presence of various concentration of adenosine triphosphate. SiO₂@Au@Ag concentration is 1 mg/mL.

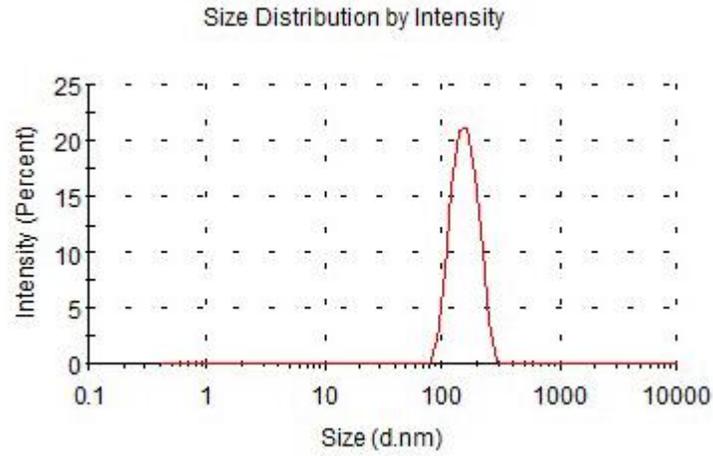


Figure S5. Average particle size of liposome as measured by dynamic light scattering. (Nano ZS90 (ZE N3690), Malvern Instrument Ltd., Malvern, UK).

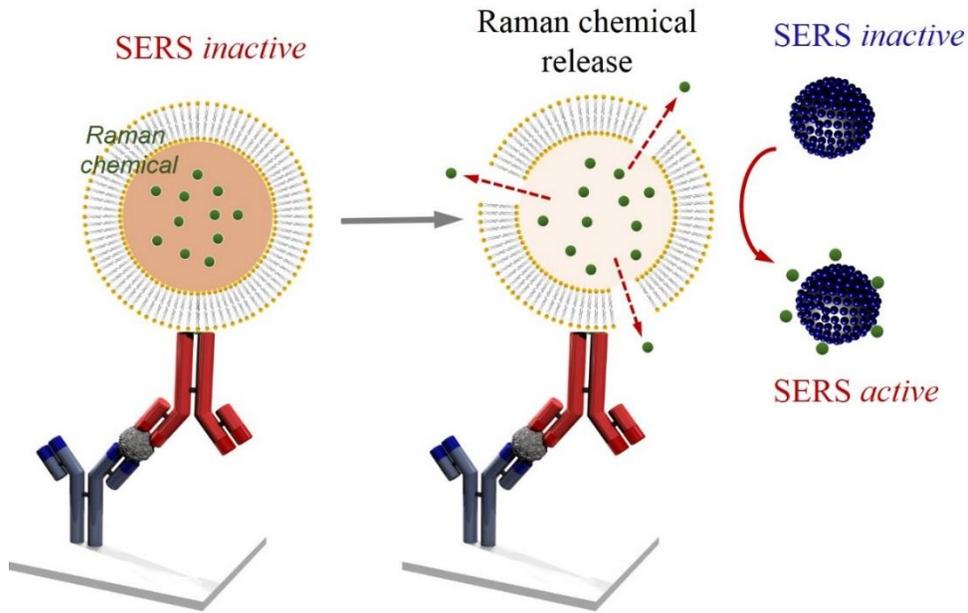


Figure S6. Suggested applications of RLC-encapsulated liposome-enhanced SERS-based immunoassays.