Supporting Information for

Electrochemically fabricated gold dendrites with underpotential deposited silver monolayers for a bimetallic SERS-active substrate

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Calculation of the electrochemical surface area (ESA)
The ESA can be quantitatively deduced from:

$$ESA = \frac{\int I dU}{av}$$

$$= \frac{1.25 \ (mA \times V)/cm^2}{(400 \times 10^{-3} \ mC/cm^2) \times (0.050 \ V/s) \times (1.05 \times 10^{-3} \ gAu/cm^2)} = 59524 \ cm^2/gAu$$

$$= 6.0 \ m^2/gAu$$

Where I and U are the current and voltage observed in a C-V scan, v is the scanning rate, a = 400 μC cm^{-2} is a scaling constant for Au surfaces, respectively. The reduction peak of the Au oxides is around 0.79 V.
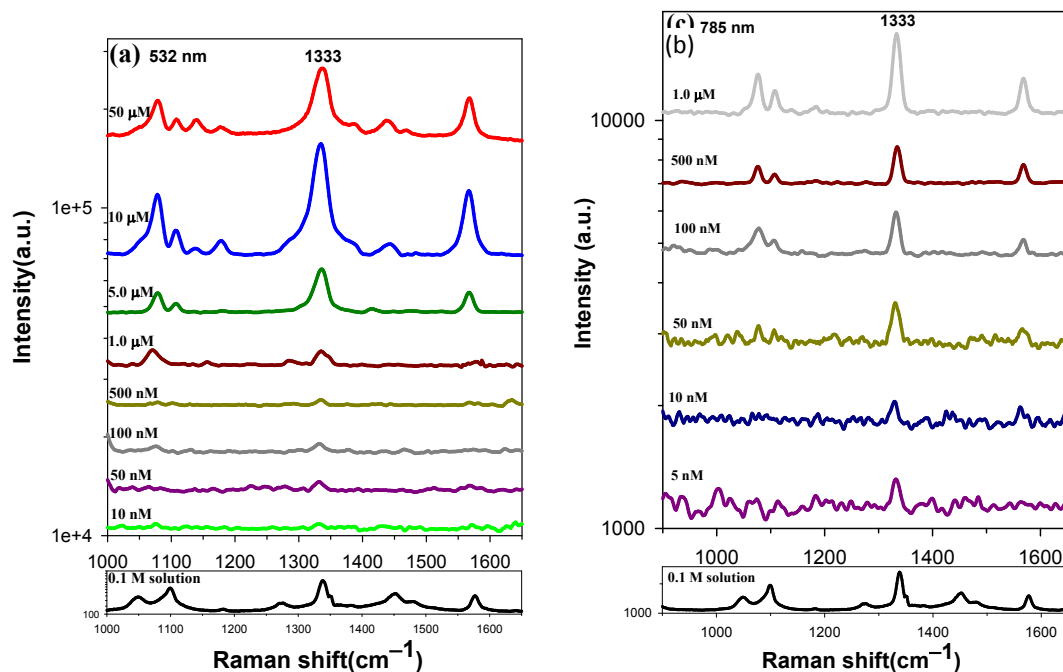
Figure S1. SERS spectra of Ag-Au-Ds after immersion in solutions with the indicated *p*-NTP concentrations. The laser excitation wavelengths are (a) 532 and (b) 785 nm. Also shown is the spectrum for neat GCE drop-coated with a 0.1 M *p*-NTP ethanol solution.
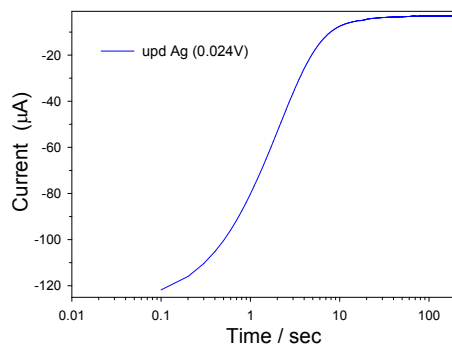

Figure S2. Electric current measured during electrodeposition of Ag on Au-Ds/GCE at a deposition potential of 0.024 V *vs.* Ag/AgCl.