Experimental for drug delivery test

Chemicals: McCoy's 5α medium and fetal bovine serum (FBS) were purchased from Invitrogen, Carlsbad, CA, USA. 5-dimethylthiazol-2-yl-2,5-diphenyl tetrazolium bromide (MTT), Triton X-100, o-phenylenediamine (o-PDA) and were supplied by Sigma. N,N-dimethylformamide (DMF) was supplied by MBI, USA. Dimethyl sulfoxide (DMSO) was supplied by J. T. Baker, USA.

Cell culture: Human bladder carcinoma T24 cells were purchased from the Bioresource Collection and Research Center (BCRC, Hsinchu, Taiwan). The T24 cell line was cultured as monolayer with McCoy's 5α medium supplemented with 10% fetal bovine serum in an incubator with humidified atmosphere of 95% air and 5% CO_2 at 37°C. Under these conditions, the plating efficiency was 90% and the doubling time was 19 hours. Single cell suspensions were obtained by trypsinization of monolayer cultures.

Cell viability: T-24 cells were seeded in 96-well culture plates at 1×10^5 cells/well. After incubation overnight, the cells were treated with varying concentrations of Au nanoparticles (0, 50, 100, 250, 500, 750 and 1000 μg/mL) for 24 hours. Then, the cells were treated with 0.5 mg/mL MTT for 1 hour and the formazan crystals produced were homogenized in 100 μL of DMSO. Optical densities (OD) were read at 570 nm and 690 nm using a microplate reader (Molecular Devices, USA). The absorbance was recorded at 570 nm with a reference at 690 nm. The cells incubated in culture medium alone or 0.01% Triton X-100 served as a negative control or cell death positive control for cell viability. The effect of Au samples on cell viability was assessed by the relative percentage of viable cells that was normalized to that of the negative control, which was arbitrarily assigned 100% viability.

Figure S1

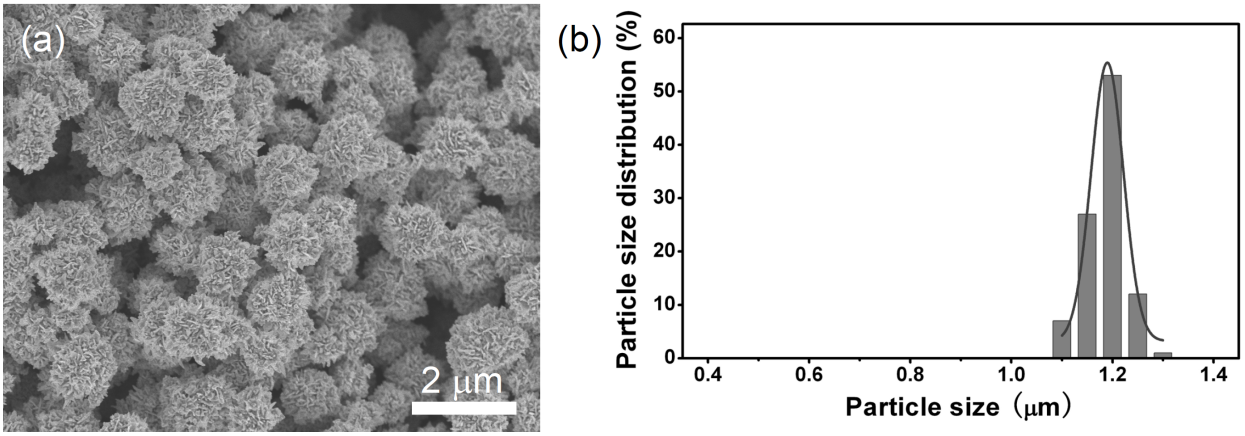

Figure S1 (a) Low magnified SEM image of Au nanoflowers prepared with 20 mM Au solution. (b) Their particle size distribution.

Figure S2

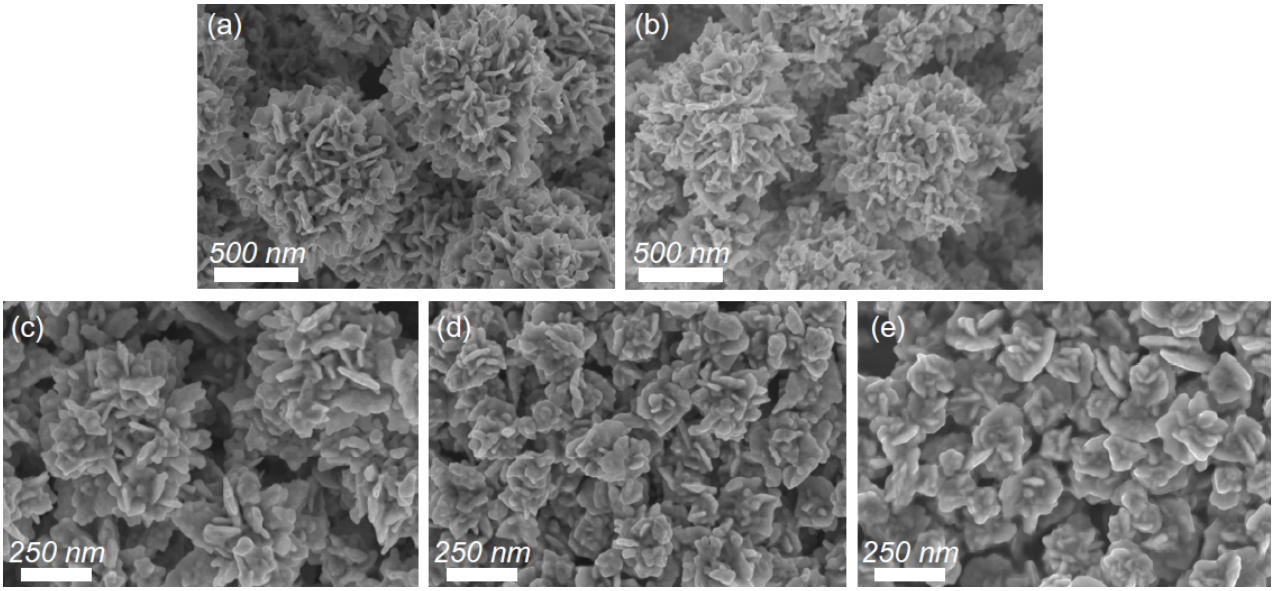

Figure S2 SEM images of Au nanostructures prepared from different Au concentrations. ((a) 20 mM, (b) 10 mM, (c) 5 mM, (d) 2 mM, and (e) 1 mM, respectively.)

Figure S3

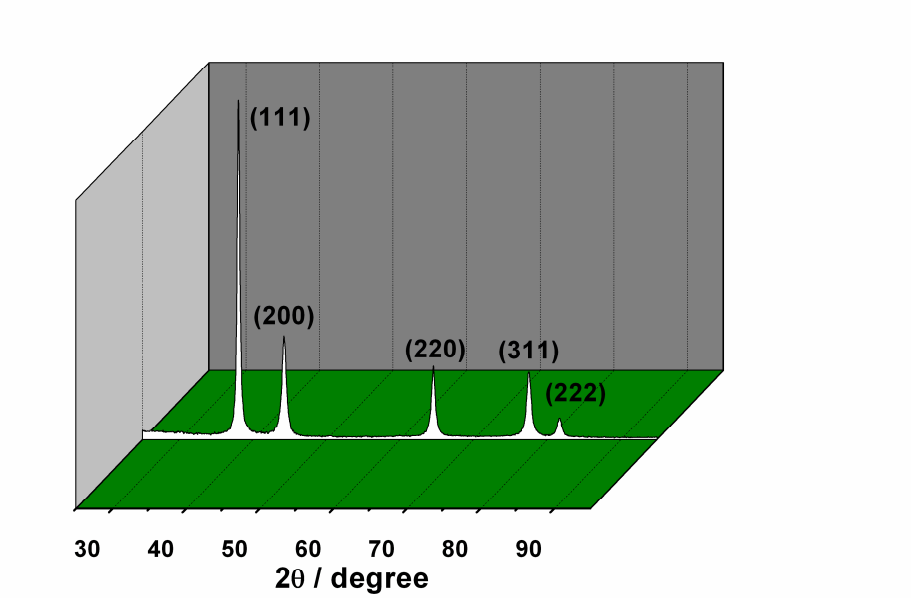

Figure S3 Wide-angle XRD profile of Au nanoflowers prepared with 20 mM Au solution.

Figure S4

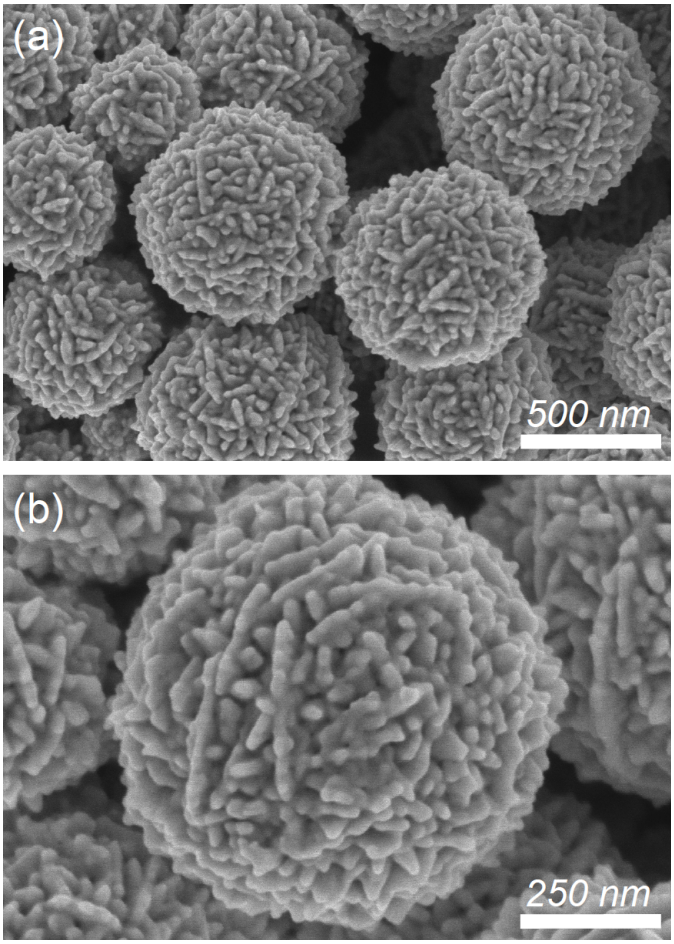

Figure S4 SEM images of Au nanostructures prepared by replacing $KAuBr_4$ with $HAuCl_4$.

Figure S5

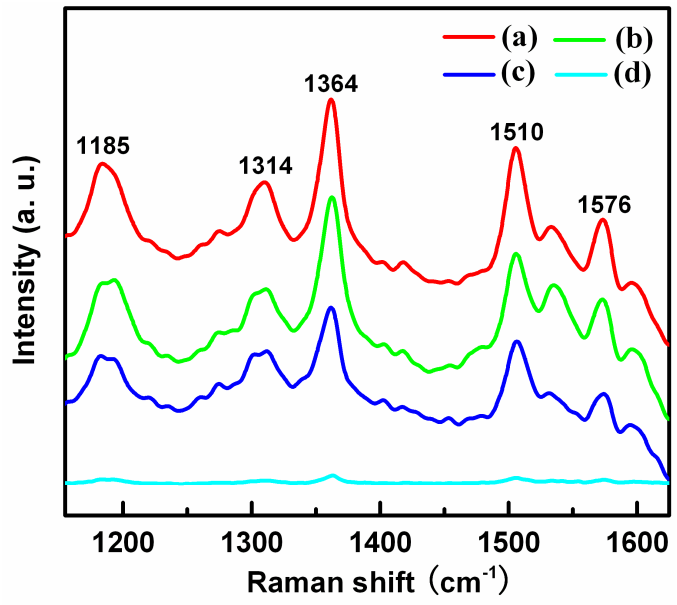

Figure S5 SERS spectra acquired from R6G absorbed on the Au nanoflowers prepared from different gold precursor concentrations ((a) 20 mM, (b) 10 mM and (c) 5 mM, respectively). For comparison, Raman spectrum recorded from R6G absorbed flat gold film is also shown in (d).