SERS-based droplet microfluidics for high-throughput gradient analysis

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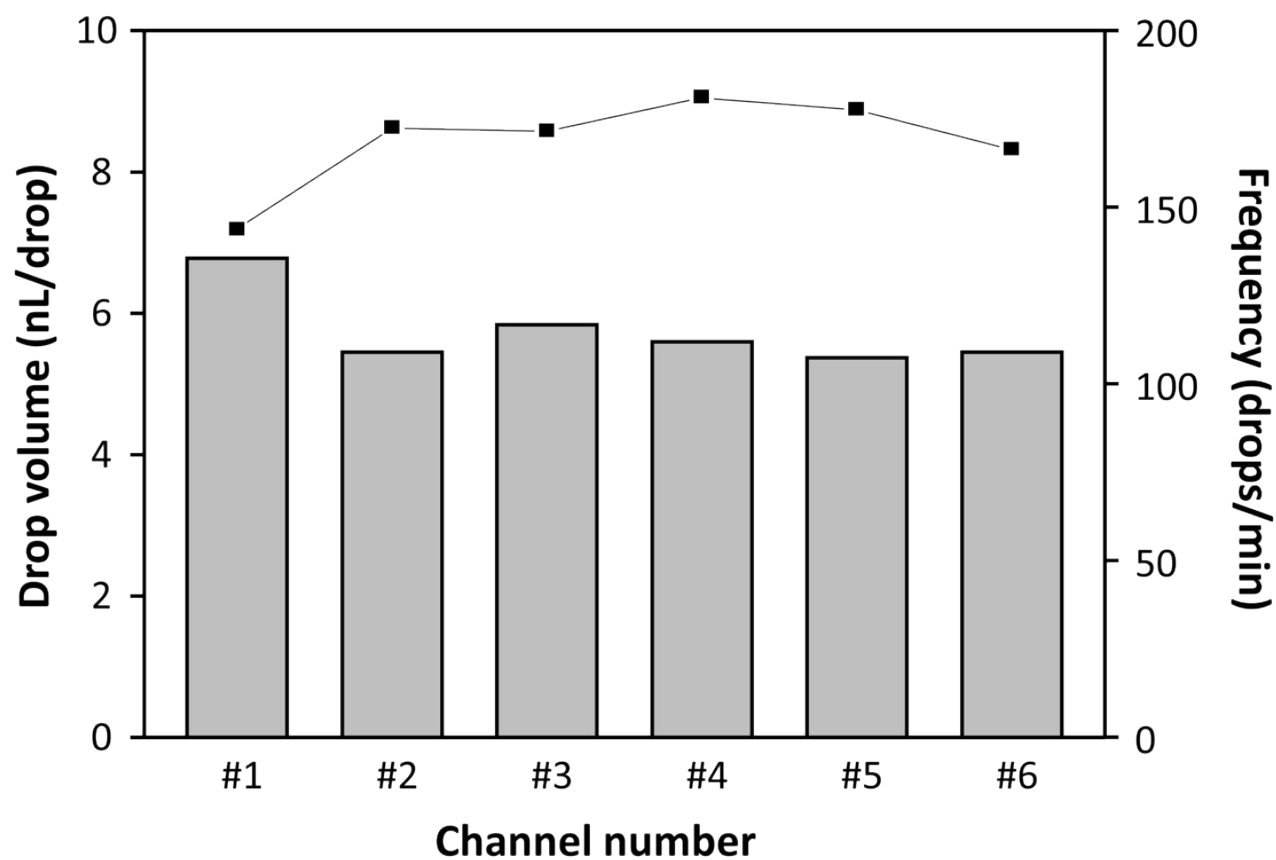
Supplementary Information

Fig. S1. The size and frequency distributions of the droplets from six different channels. The frequency of droplets was measured with a high-speed camera, and the total droplet volumes were calculated from the number of droplets passing through a specific point in each channel.
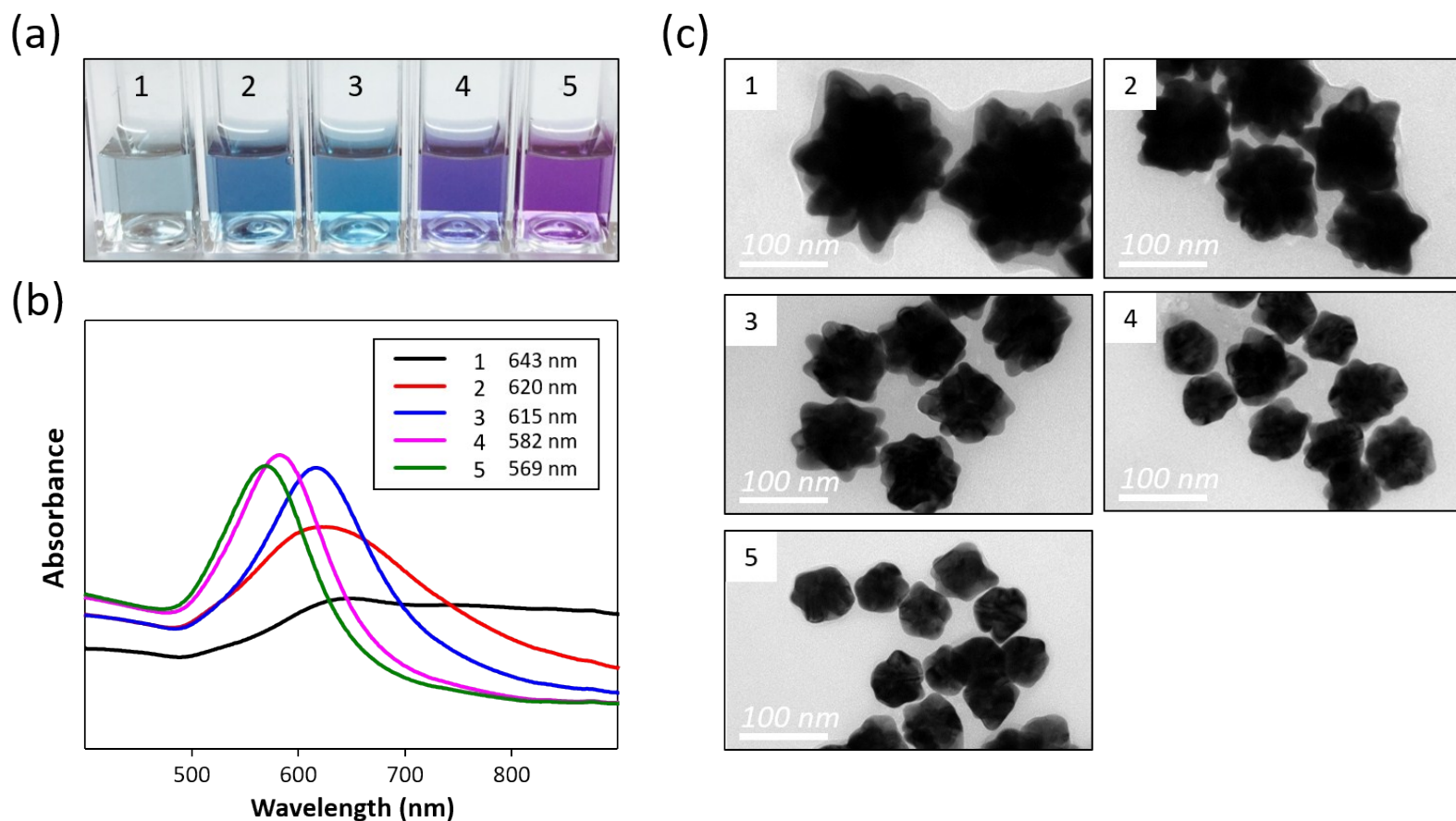
Fig. S2. Gold nanoflowers (AuNFs) were synthesized by the seed-mediated growth method. (a) Photograph of five different sizes of AuNFs, demonstrating the colour changes caused by altering the amount of gold nanosphere seeds (1) 15, (2) 50, (3) 100, (4) 200, and (5) 300 uL. (b) UV absorbance spectra of five different sizes of nanoparticles, demonstrating that the branched structure gives rise to a red shift, indicating changes in surface plasmon resonance. (c) TEM images showing the different morphologies of five nanoparticles.
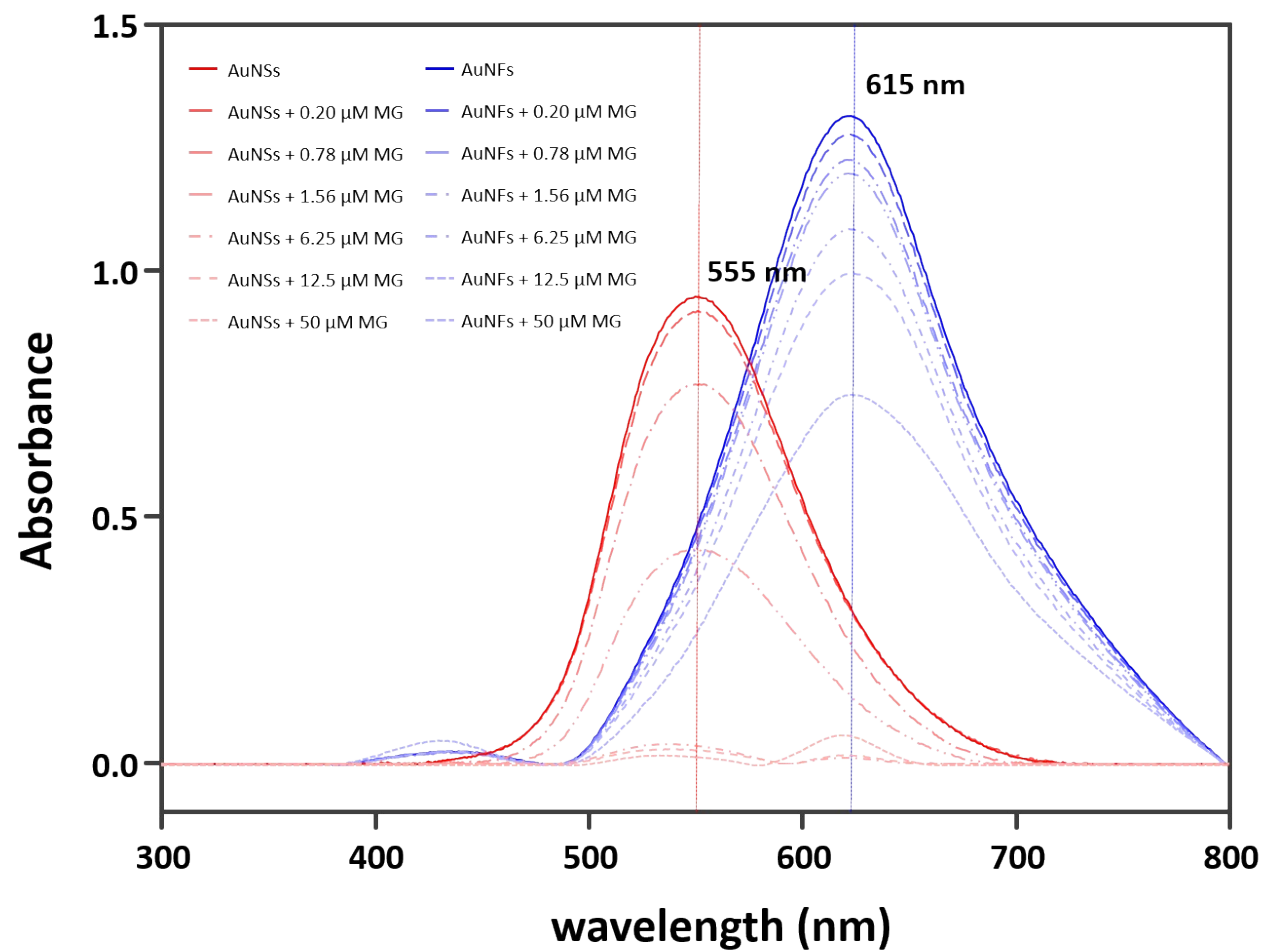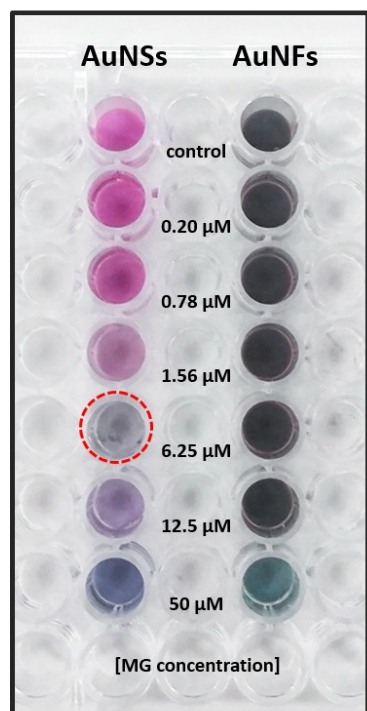
Fig. S3. Color changes of AuNSs-MG and AuNFs-MG mixtures (left) and corresponding UV-Vis spectra (right) for seven different concentrations of MG
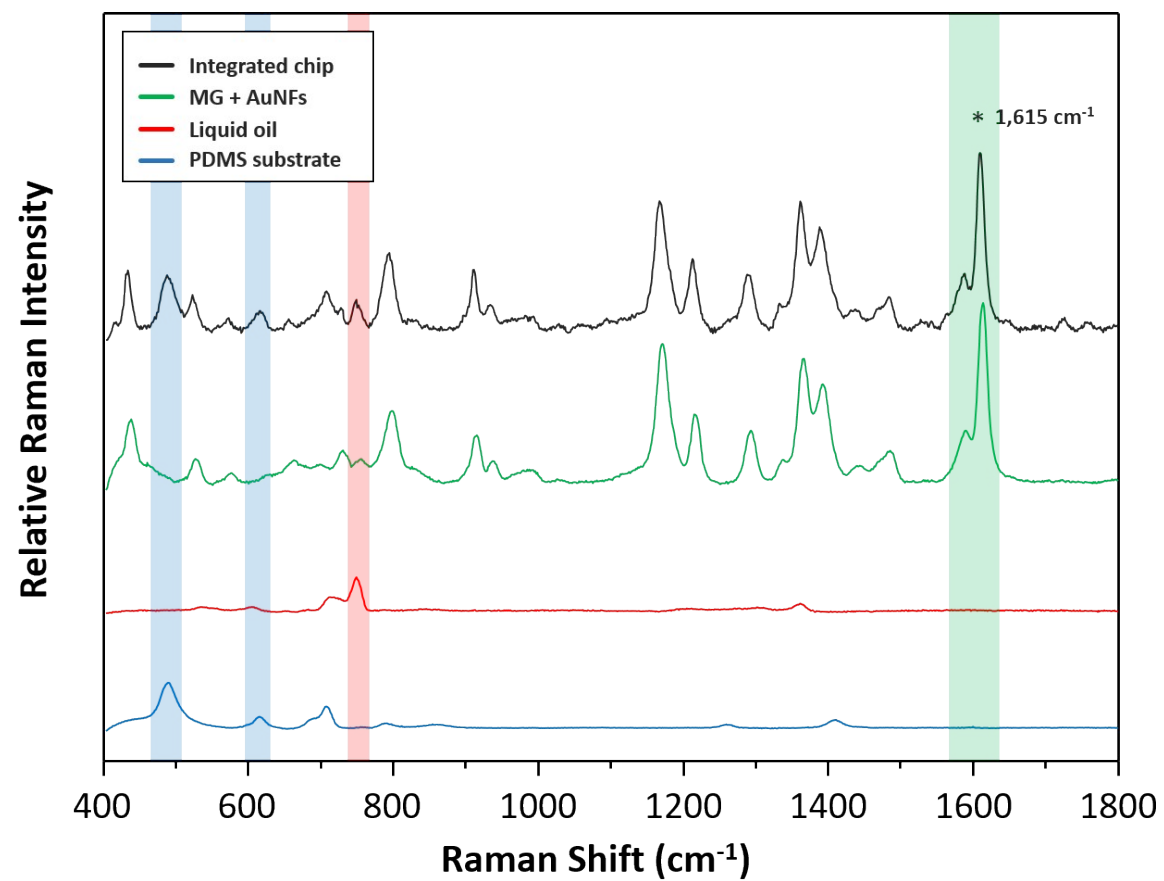
Fig. S4. Raman spectra of PDMS, liquid oil, MG and AuNFs mixtures and the same mixtures in the microdroplet channel in the 400~1800 cm^{-1} range.