Supporting Information for

Aerosol Based Fabrication of Thiol–Capped Gold Nanoparticles and Their Application for Gene Transfection

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- UV–vis spectra of spark generated Au and thiol–capped Au nanoparticles:

![UV–vis spectra of spark generated Au and thiol–capped Au nanoparticles.](image)

**Figure 1S.** UV–vis spectra of spark generated Au and thiol–capped Au nanoparticles.

UV-vis absorbance measurements (**Figure 1S**) were performed on a Perkin-Elmer 330 spectrophotometer (US), with a variable radiation wavenumber between 400 and 800 nm, at a rate of 60 nm min$^{-1}$ and a spectral resolution of 2 nm. Specimens were prepared by a detachment of particles from a PTFE substrate into water in the presence of ultrasound (10 sec). Peak positions (~520 nm) of the plasmon resonance for the spark generated Au and thiol-capped Au nanoparticles were similar, but the width for the thiol-capped Au nanoparticles was broader. A size increase due to aggregative growth for the thiol-capped Au nanoparticles (refer Figures 2 and 3) may cause a broadening of the high wavelength side of the resonance peak.
- Size distributions of aerosol PEI and chitosan particles:

![Graph showing size distributions of aerosol PEI and chitosan particles.](image)

**Figure 2S.** Size distributions of aerosol PEI and chitosan particles.

**Figure 2S** summarizes results of the size distributions of aerosol PEI and chitosan particles. The GMD, GSD, and TNC of the PEI are 120.7 nm, 1.90, and $6.26 \times 10^6$ particles cm$^{-3}$, respectively. The same data for the chitosan particles are 164.6 nm, 1.71, and $4.91 \times 10^6$ particles cm$^{-3}$, respectively. Both particles were obtained by collison atomizing the each solution (PEI, 25 kDa PEI dissolved in de-ionized water; chitosan: 15 kDa chitosan dissolved in 1% (v/v) acetic acid), briely the atomized droplets then pass through a heated tubular reactor operating at 90$^\circ$C to drive solvent from the droplets.