Electronic Supplementary Information (ESI) for

Multifaceted prismatic silver nanoparticles: synthesis by chloride-directed selective growth from thiolate-protected clusters and SERS properties

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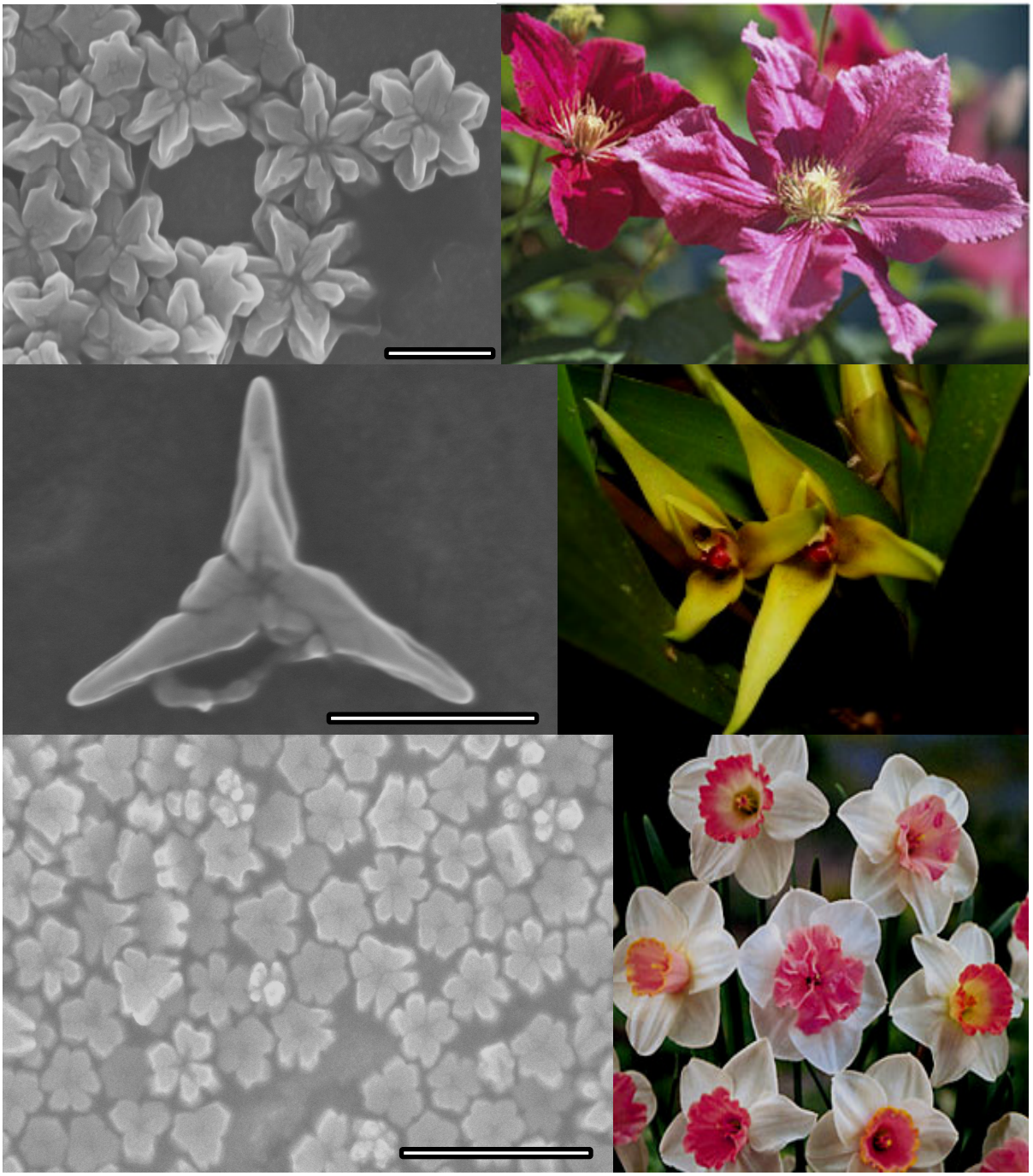

Figure S1A. Scanning electron microscopy (SEM) images of silver nanoflowers, AgNFls, and their similarity to images of clematis (http://images.art.com/images/products/regular/11904000/11904879.jpg), **top**; Maxillaria orchids (http://orchids.wikia.com/wiki/Maxillaria_nasuta), **middle**; and daffodils (http://thescarletpoppy.wordpress.com/2009/06/16/a-flower-by-two-names), **bottom**. All scale bars are 500 nm.

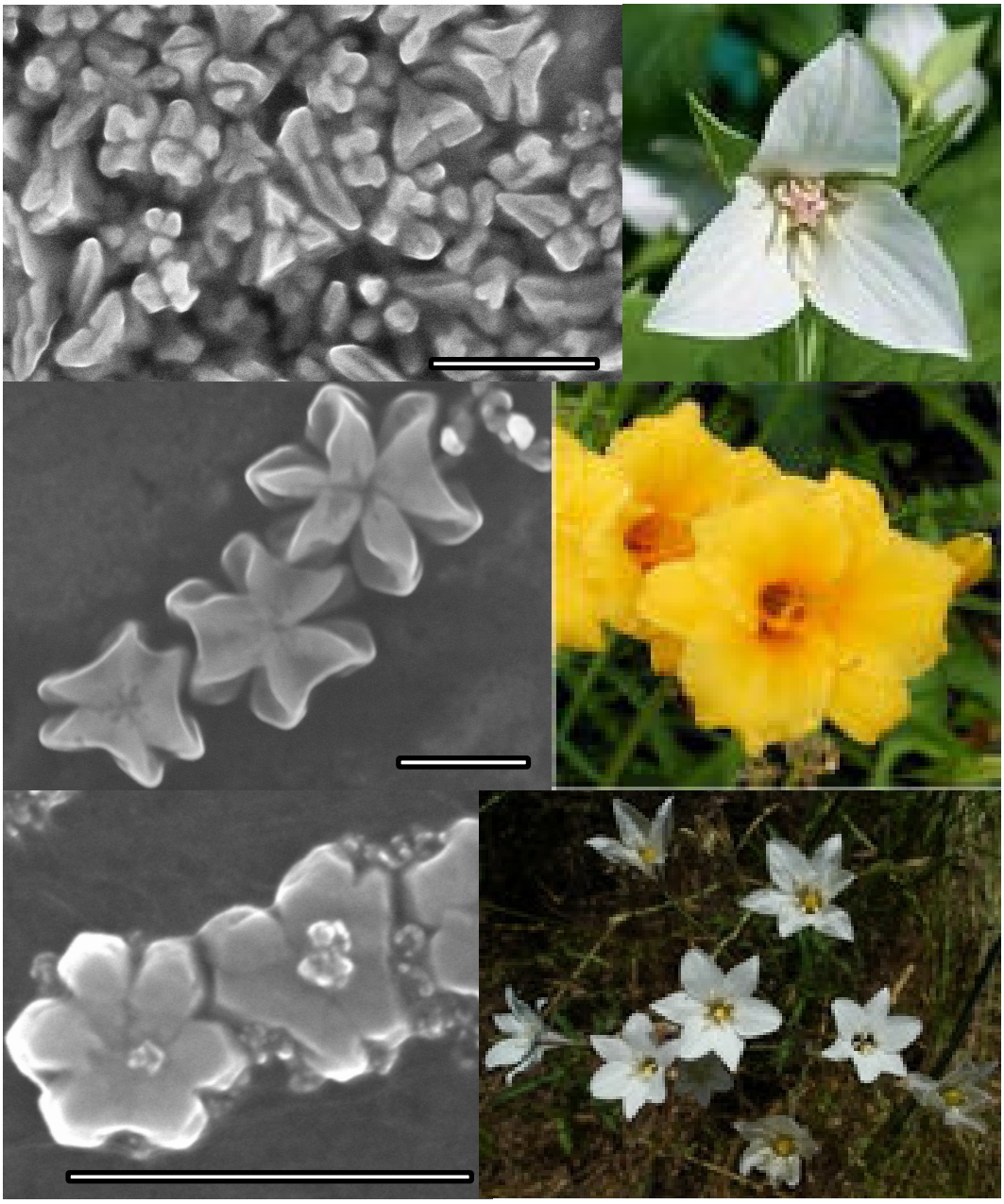

Figure S1B. Scanning electron microscopy (SEM) images of silver nanoflowers, AgNFls, and their similarity to images of trillium (http://www.hughnunn.co.uk/trilliums.asp) **top**; daylilies (http://www.touchofnature.com/fallcatalog/daylilies.htm), **middle**; and wild hyacinth (http://calphotos.berkeley.edu/cgi/img_query?where-genre=Plant&wheretaxon=Triteleia%20hyacinthina), **bottom**. All scale bars are 500 nm.

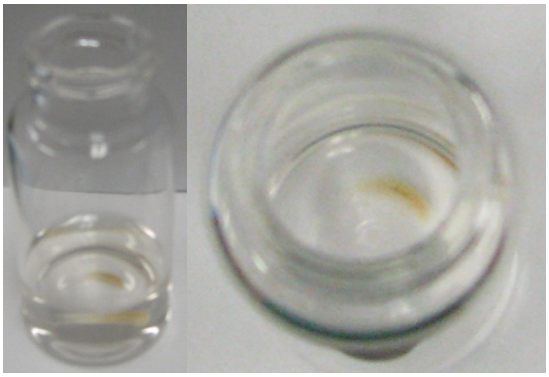

Figure S2. Optical images of the sedimented AgNFl sample 20 hrs after synthesis.

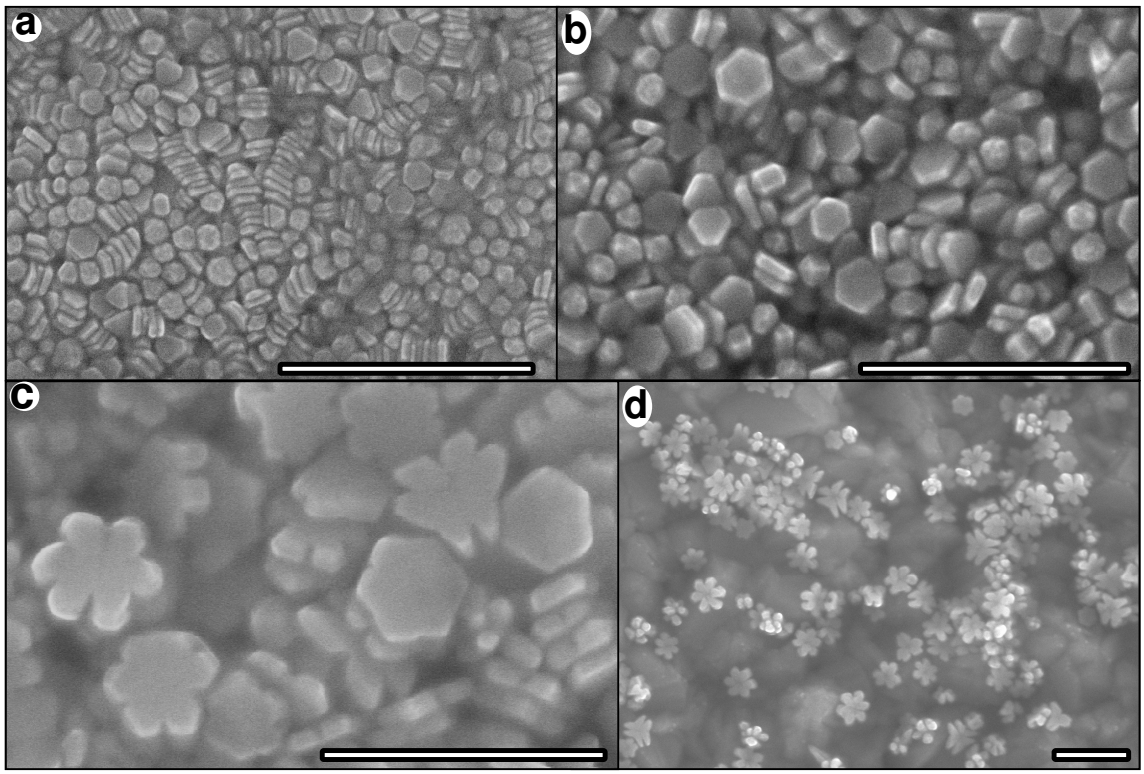

Figure S3. SEM images of AgNFl samples prepared with varying concentrations of KCl: **a**) 0, **b**) 0.094 mM, **c**) 0.19 mM, and **d**) 0.32 mM. All scale bars are 500 nm.

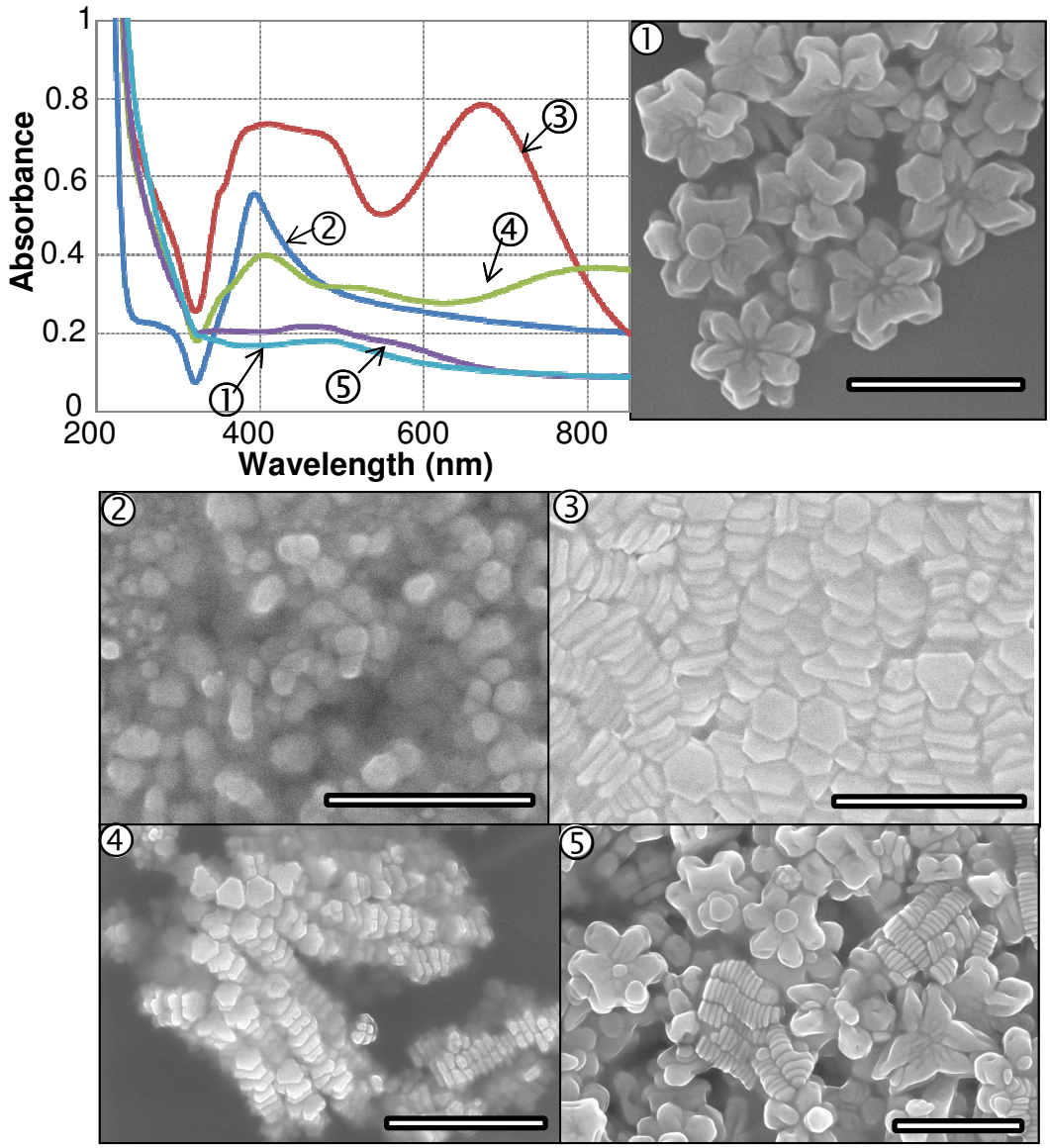

Figure S4. UV-vis spectra of AgNFl samples prepared with varying concentrations of captopril (top left). ① 0.25 mM (typical captopril concentration used), ② 0, ③ 0.076 mM, ④ 0.13 mM, ⑤ 0.21 mM. SEM images of AgNFl samples corresponding to UV-vis spectra and labeled accordingly**.** Scale bars are: ① 500 nm, ② 500 nm, ③ 500 nm, ④ 1 µm, ⑤ 500 nm.

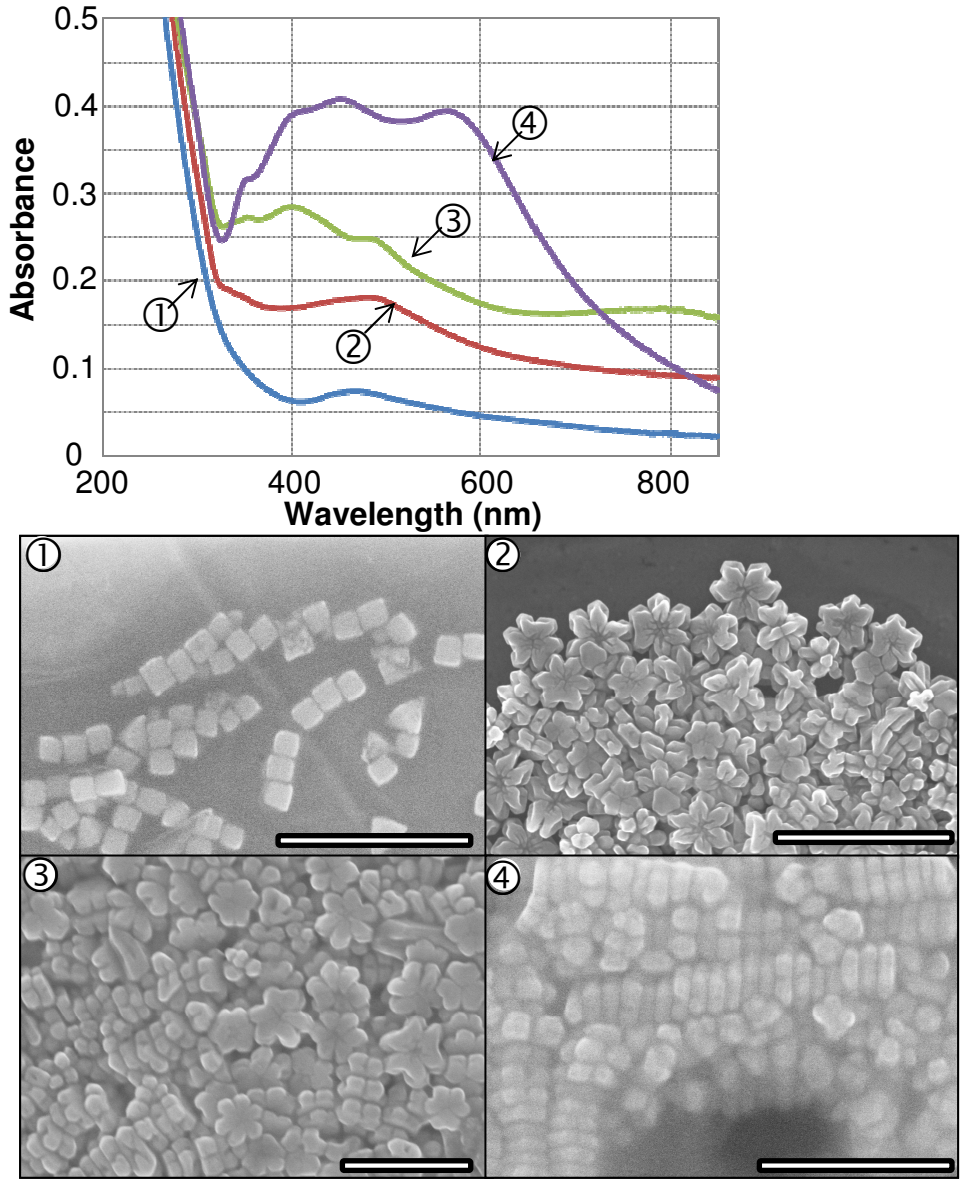

Figure S5. UV-vis spectra of AgNFl samples prepared with varying concentrations of KOH (top): ① 7.1 mM, ② 8.1 mM, ③ 8.8 mM, and ④ 9.5 mM. SEM images of AgNFl samples corresponding to UV-vis spectra and labeled accordingly**.** Scale bars are: ① 3 µm, ② 1 µm, ③ 500 nm, ④ 400 nm.

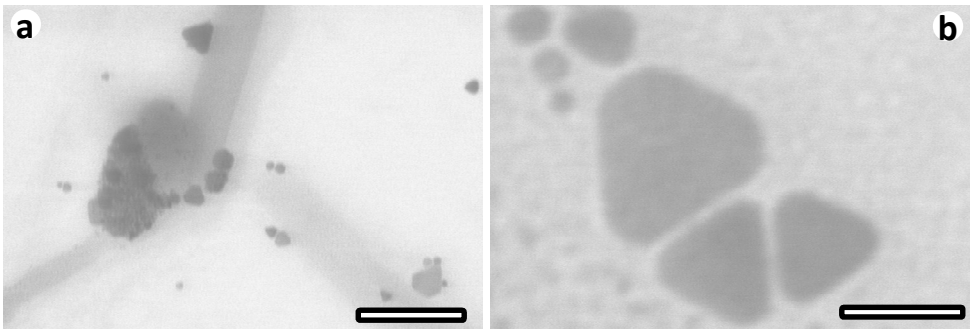

Figure S6. TEM images of AgNFl intermediates that correspond to spectrum ③ of the Figure 2 dried on a carbon grid. Scale bars are **a)** 200 nm; **b)** 20 nm.

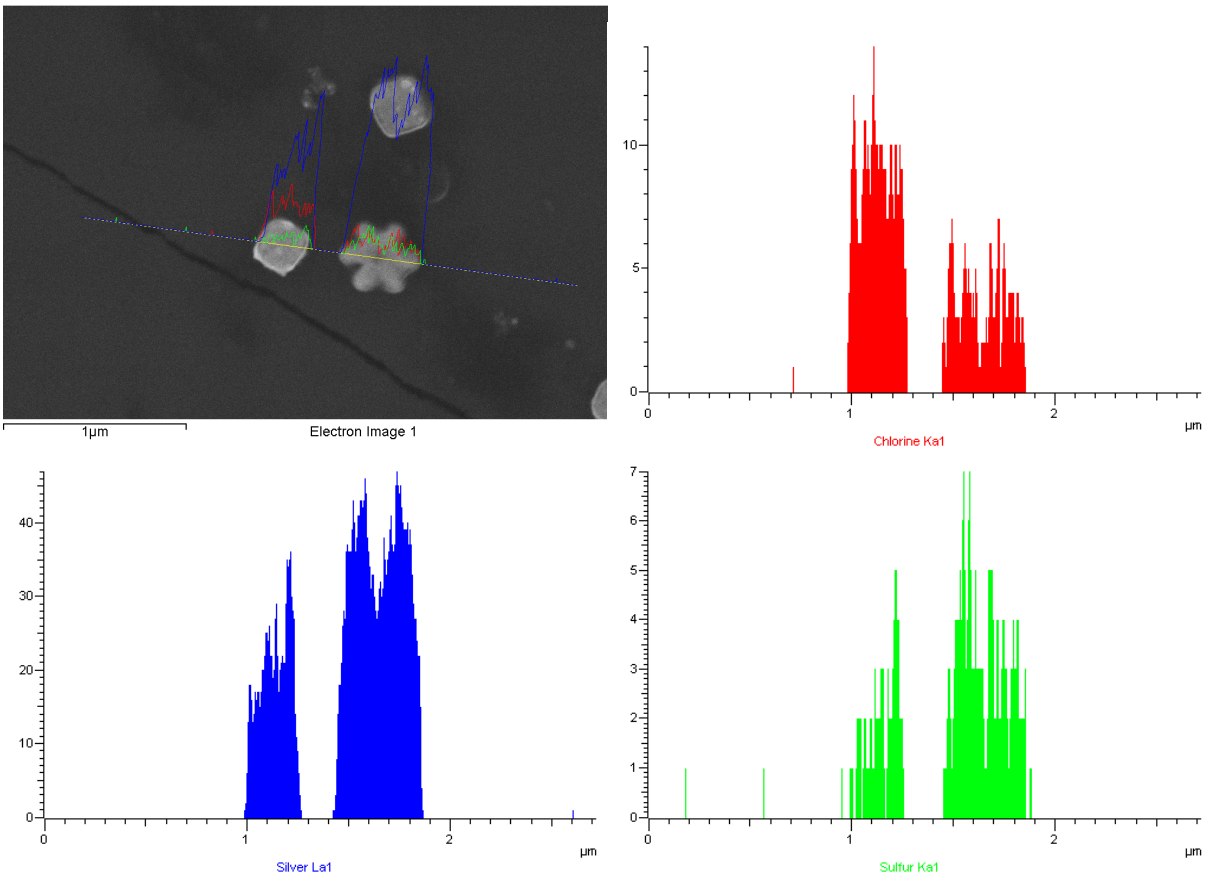

Figure S7. Energy dispersive X-ray (EDX) line scans of as prepared AgNFl samples that coexist with silver chloride cubes. Note correspondingly higher silver and lower chloride signals for AgNFl compared to AgCl cubes (see also Figure **3** in the main text) and the fact that AgNFls after plasma cleaning (see Figure **S8**) have no chloride and sulfur in them detectable by EDX (data not shown).

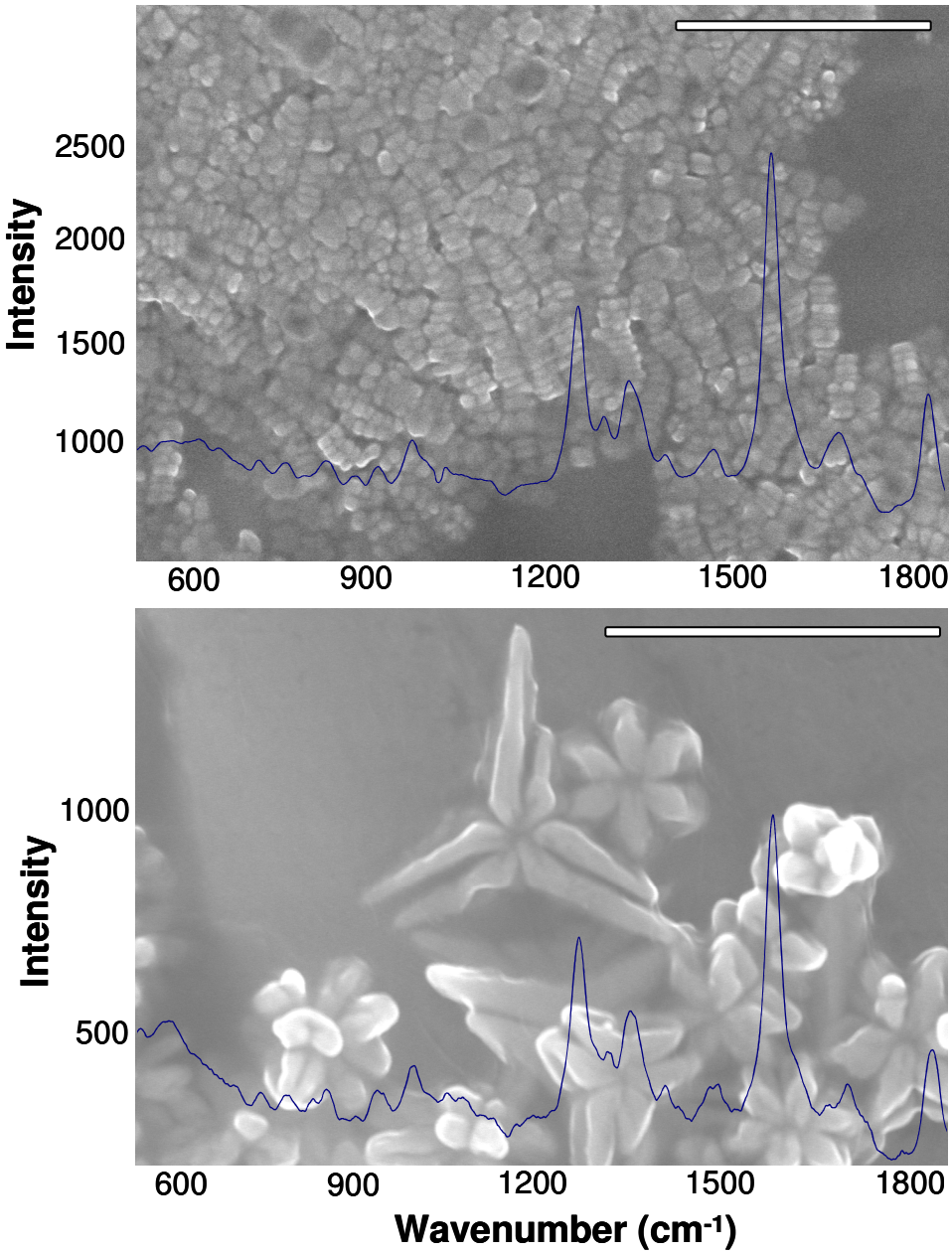

Figure S8. Representative Raman spectra of 5,5'-dithiobis(2-nitrobenzoic acid) at 3.2×10^{-14} mol/cm^2 superimposed with the corresponding SEM images of the solid films of AgNFl samples that enhanced the Raman signal. All scale bars are 1 μm.