Electronic Supplementary Information

3D-printed phantoms for characterizing SERS nanoparticle detectability in turbid media

Andrew M. Fales,*[a] Pietro Strobbia,[b,c] Tuan Vo-Dinh,[b,c,d] Ilko K. Ilev,[a] and T. Joshua Pfefer [a]

a. Division of Biomedical Physics, Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, Maryland 20993.
b. Fitzpatrick Institute for Photonics, Duke University, Durham, North Carolina 27708.
c. Department of Biomedical Engineering, Duke University, Durham, North Carolina 27708
d. Department of Chemistry, Duke University, Durham, North Carolina 27708.
* Corresponding author: andrew.fales@fda.hhs.gov

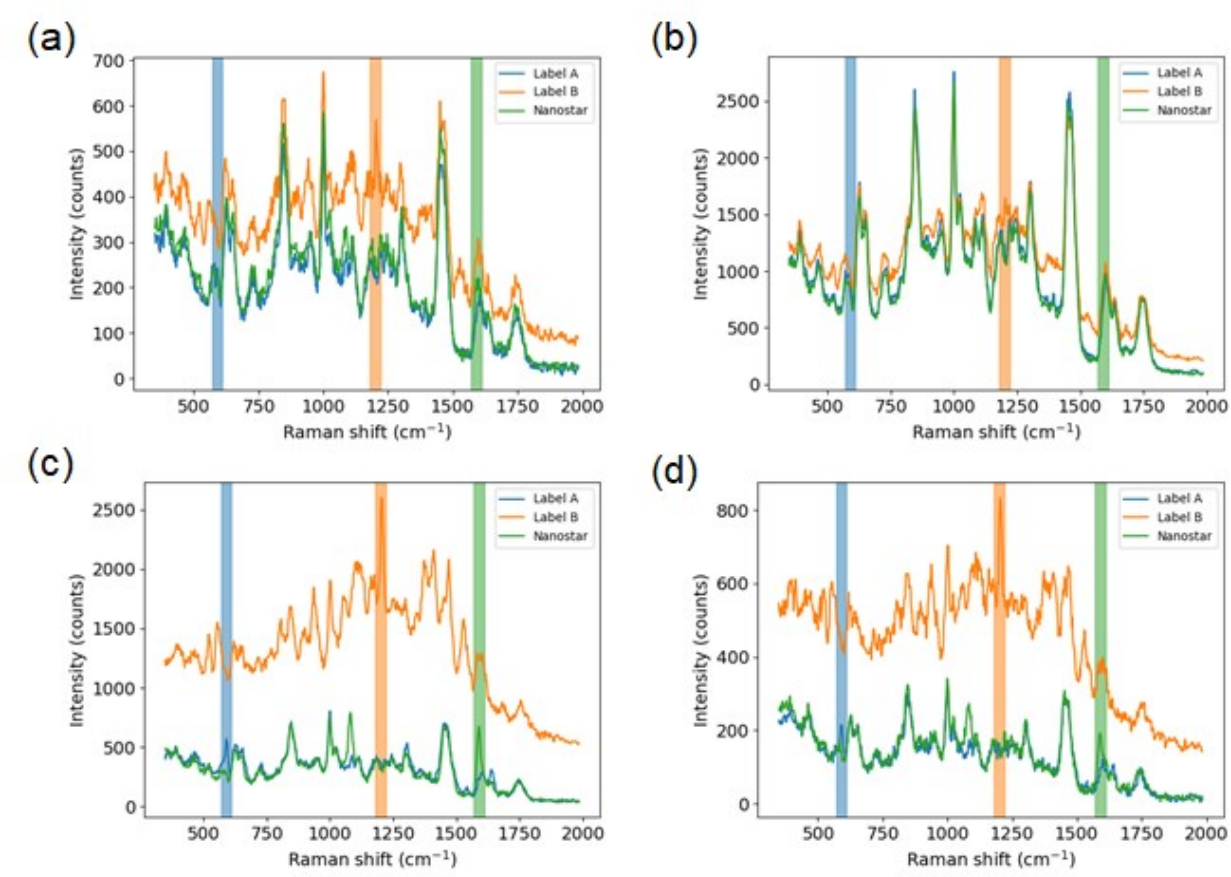

Figure S1. Spectra collected at probe heights of 9.5 mm (a), 7.5 mm (b), 5.5 mm (c), and 3.5 mm (d), centered on the channel, for the three SERS tags at a channel depth of 3 mm. The shaded regions mark the respective peaks of interest for each of the SERS tags.

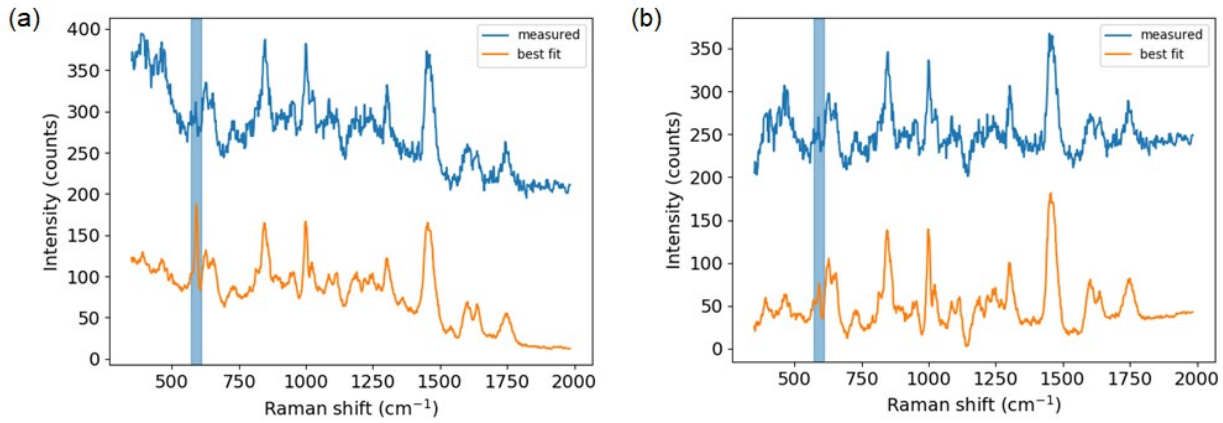

Figure S2. (a) Comparison of the NNLS unmixing results to the measured spectrum at the 1-mm axial, 10-mm lateral position for the Label A SERS tag at 4-mm depth. (b) The same data when using background subtraction. The shaded region marks the main peak of interest for Label A.

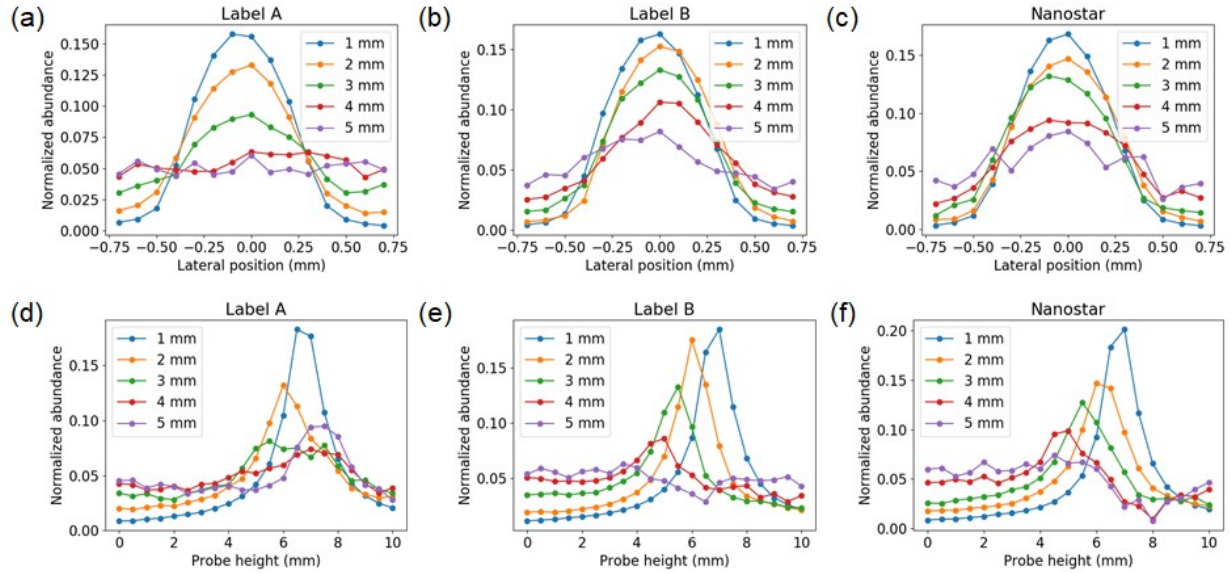

Figure S3. Integrated lateral (a-c) and axial (d-f) profiles of the abundance maps from Figure 6 for the three SERS tags at channel depths of 1-5 mm. All profiles were normalized to the area under the curve to aid in visual comparison.

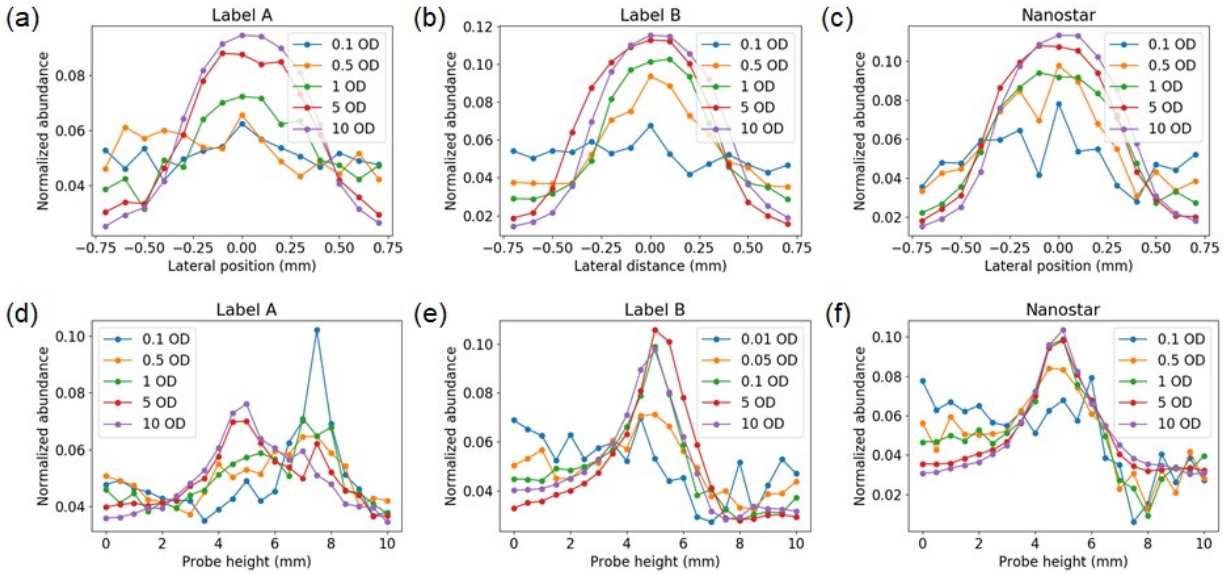

Figure S4. Integrated lateral (a-c) and axial (d-f) profiles of the abundance maps from Figure 7 for the three SERS tags at a channel depth of 4 mm and concentrations from 0.1-10 OD. All profiles were normalized to the area under the curve to aid in visual comparison.