

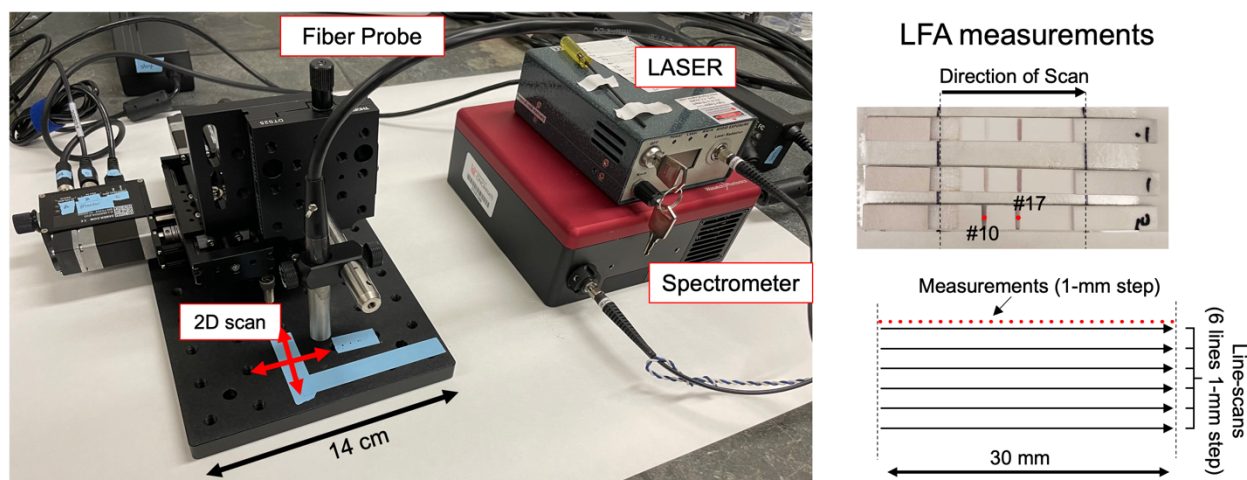
## SUPPORTING INFORMATION

### Improved Point-of-Care Detection of *P. gingivalis* Using Optimized Surface-Enhanced Raman Scattering in Lateral Flow Assays

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**Fig. S1.** Image of benchtop Raman setup for measurements on LFA, including schematics of scanning measurements on LFA.

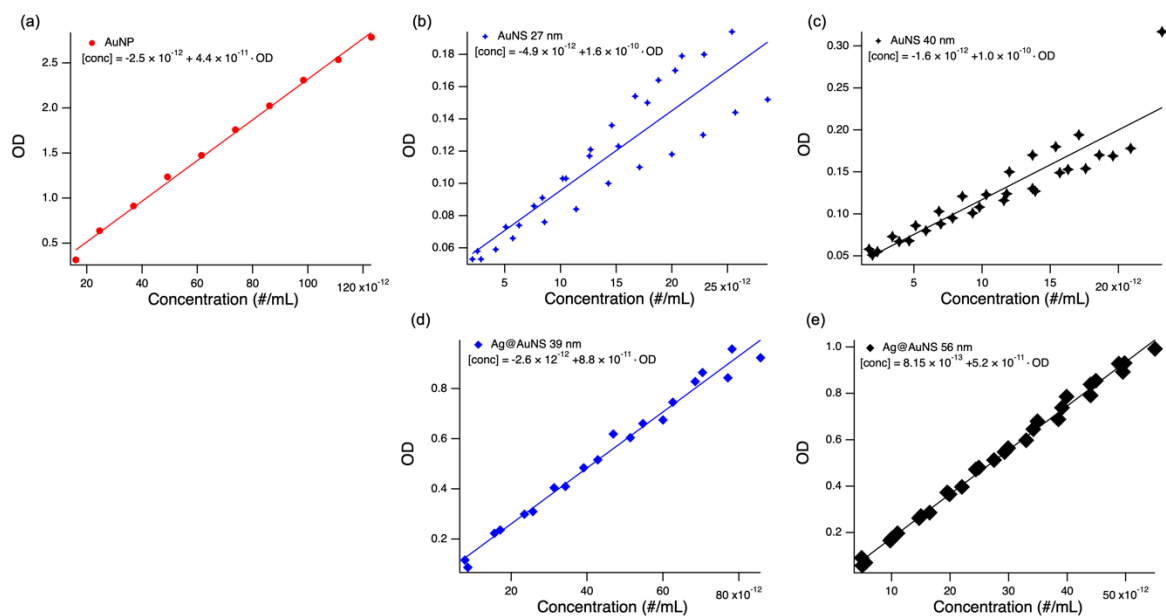
### Image J Analysis

#### ImageJ Analysis 1

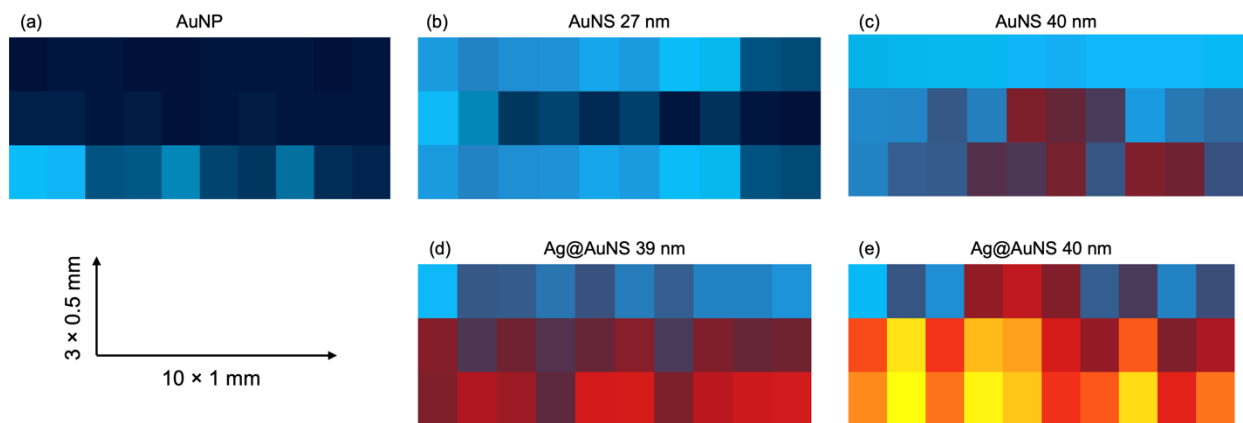
1. For each strip, measure 'mean intensity' in both yellow and green boxes.
  - Fixed size of the boxes for all measurements. (34-40 x 170 pixels)
  - Green box is 100 pixel away from yellow box.
2. Substrate green box mean value from the yellow box mean value.
  - Mean intensity = Yellow Mean – Green Mean



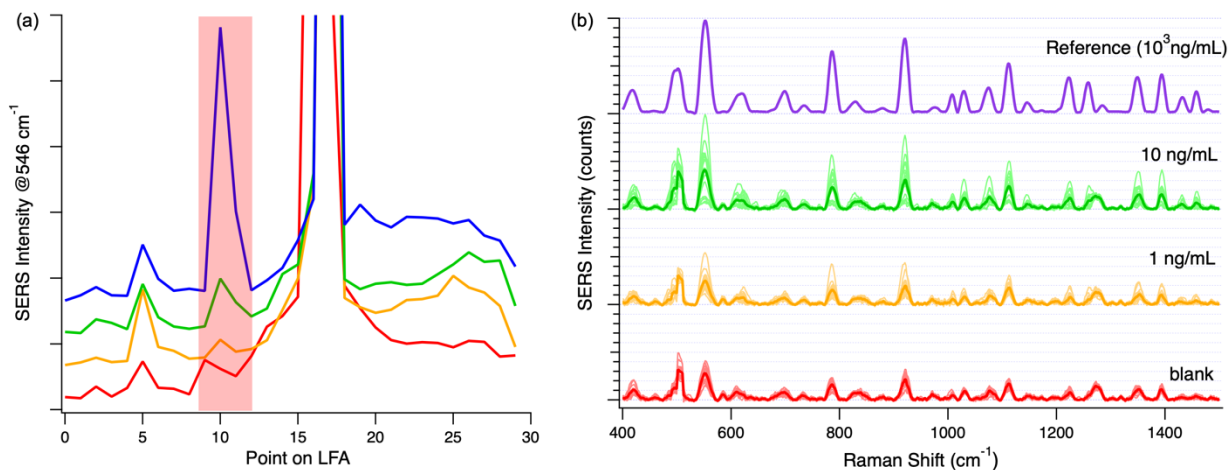
**Fig. S2.** Schematic representation of process for colorimetric analysis of LFA strip.



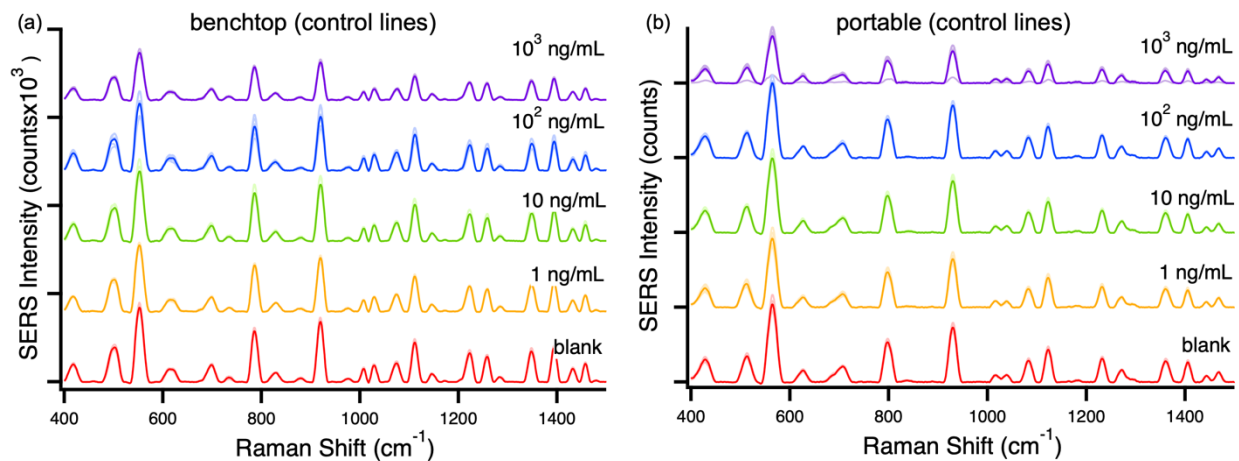
**Fig. S3.** Calibration of OD as a function of concentration (measured by NTA) for the different nanomaterials used to compare material SERS intensities normalized for concentration for (a) AuNP, (b) Au NS 27 nm, (c) Au NS 40 nm, (d) Ag@Au NS 39 nm and (e) Ag@Au NS 56 nm.



**Fig. S4.** Intensity maps associated with the spectral data shown in Fig. 3c, showing the variance in intensity across the control line.



**Fig. S5.** (a) Scaled version of Fig.4c showing the target line intensities for blank, 1, 10, 100 ng/mL (not easily visible in the original figure). (b) Spectra for the target line for blank, 1, 10 ng/mL with a reference spectrum for the specific Raman reporter, showing single spectra for each measurement (light line) and their average (thick line).



**Fig. S6.** Spectra of control lines associated with the strip measured in Fig.5, for benchtop (a) and portable Raman (b). Single spectra for each measurement are reported with light lines and their average as a thick line.