

**Supporting Information for**  
**Simultaneous 3D Construction and Imaging of Plant Cells Using Plasmonic**  
**Nanoprobe Assisted Multimodal Nonlinear Optical Microscopy**

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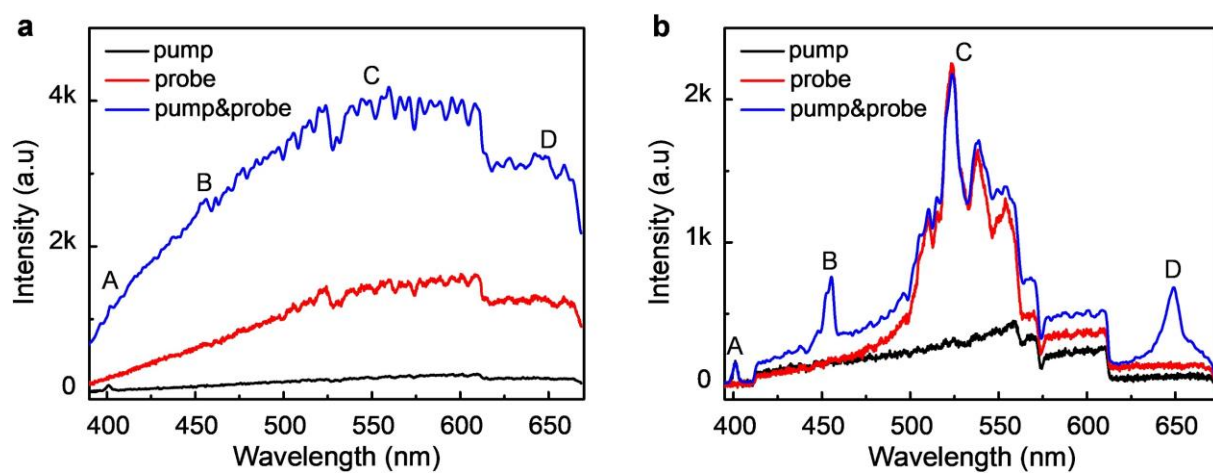
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S1. Nonlinear optical responses of noble metal nanoparticles produced by femtosecond laser

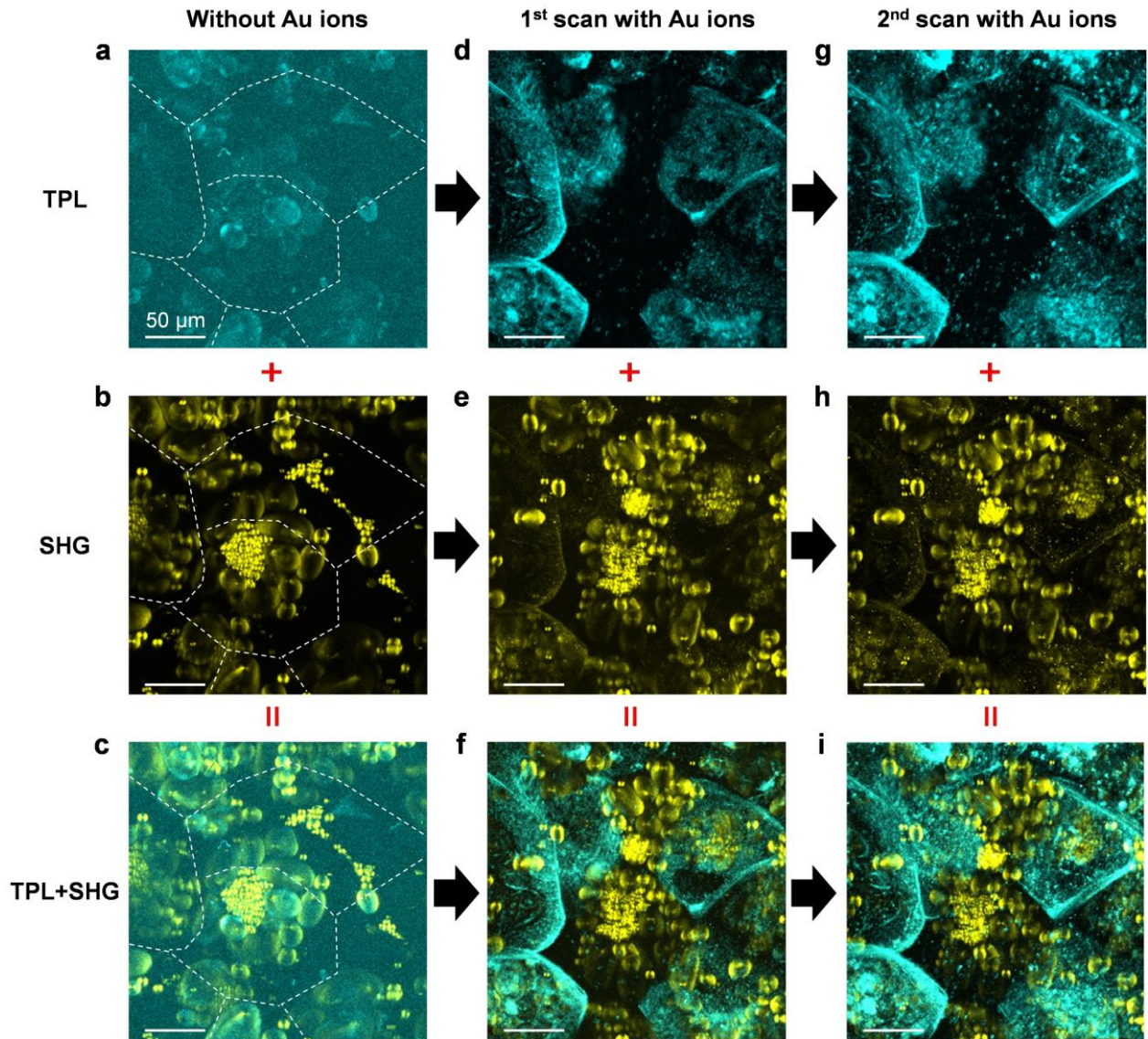
S2. Simultaneous 3D construction and nonlinear optical imaging of potato cells in gold ion solution

## S1. Nonlinear optical responses of noble metal nanoparticles produced by femtosecond laser



**Figure S1.** Nonlinear optical spectra of (a) silver NPs and (b) gold NPs on fused silica substrates produced by femtosecond (fs) laser photoreduction of silver and gold ion solution, respectively.

## S2. Simultaneous 3D construction and nonlinear optical imaging of potato cells in gold ion solution



**Figure S2.** (a-c) 2D Z-stacked (a) TPL, (b) SHG, and (c) overlaid TPL-SHG images of the potato cell without adding gold ion solution. The dashed lines indicate the cell wall of the potato. (d-f) Corresponding TPL, SHG, and overlaid TPL-SHG images in (a-c), respectively, taken with fs laser scan only for one time in gold ion solution. (e) Corresponding TPL, SHG, and overlaid TPL-SHG images in (a-c) with fs laser scan for the second time in the same gold ion solution. The scale bars are 50  $\mu\text{m}$ .