

## AuNP Cell and Tissue Uptake: Observation and Spectral Confirmation

AuNPs have continued to evolve as the top nanoparticle platform for theranostic related applications. During 2015, there were over 53,000 Google Scholar references for *gold nanoparticles*, which is almost double any other nanoparticle reference. The combined strength of high surface area and diagnostic imaging potential serves to provide distinct advantages for theranostic and related applications.

To prove the efficacy of targeted AuNPs in any theranostic study, a fast, label free imaging method is required to observe and confirm their presence in cells and ex-vivo in tissue as is illustrated below.

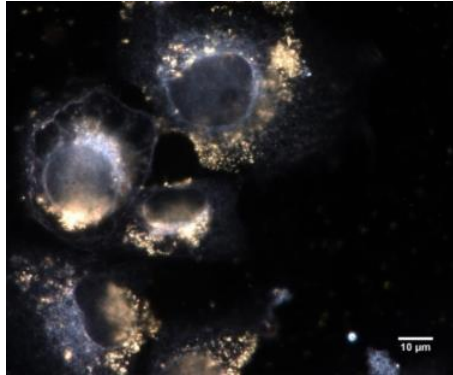


Figure 1: AuNPs in Cells 60x

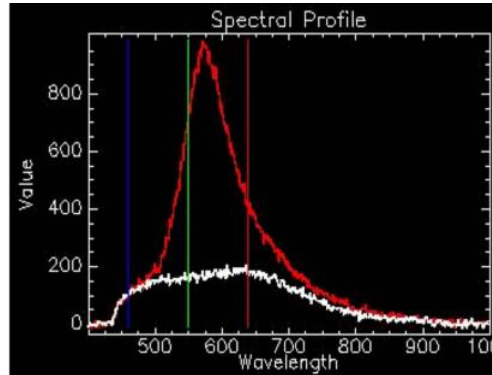


Figure 2: Spectral Response AuNPs (red) and Cells (white)

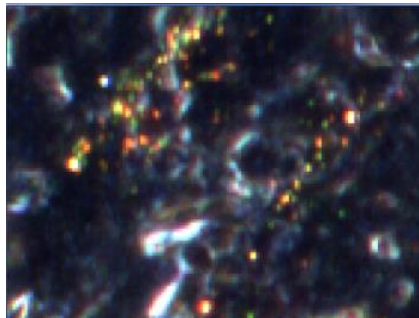


Figure 3: AuNPs in Tissue 60x plus 5x Digital Zoom

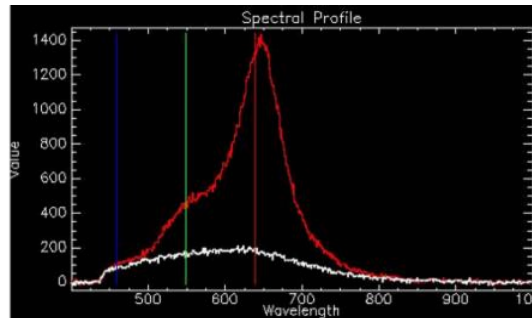



Figure 4: Spectral Response AuNPs (red) and Tissue (white)

CytoViva's Enhanced Darkfield Hyperspectral Microscope has become a standard for high throughput observation and confirmation of AuNP uptake both in cells and tissue. With this method, you can view the AuNPs interacting with live or fixed cells in seconds after mounting the slide onto the microscope. No fluorescent labeling or sample fixation is required. See above in Figure 1 a hyperspectral image of AuNPs aggregating in macrophages. These nanoparticles are visually obvious and also have a distinct spectral response as recorded in Figure 2 due to their plasmonics, even when internalized in the cell.

AuNPs can also be easily observed and spectrally characterized in ex-vivo tissue using this technique. See above in Figure 3 Au nanoparticles in unstained tissue along with the spectral response from these nanoparticles as recorded in Figure 4.

If your team is studying AuNPs or other nanoparticles in theranostic or related applications, and you need a fast effective method for observing and spectrally confirming these nanoparticles in any environment, please contact CytoViva at [info@cytoviva.com](mailto:info@cytoviva.com). We will be pleased to discuss your research and conduct test imaging of your samples to help you confirm the efficacy of this technique.

### More Information

More Information at [www.cytoviva.com](http://www.cytoviva.com), , or   
Contact Us at [info@cytoviva.com](mailto:info@cytoviva.com)