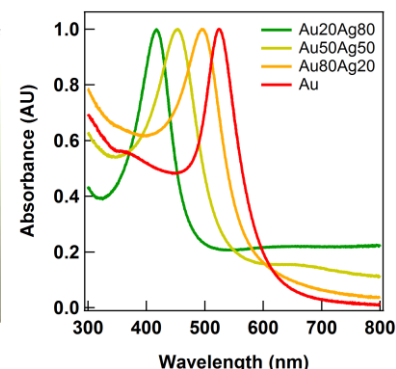
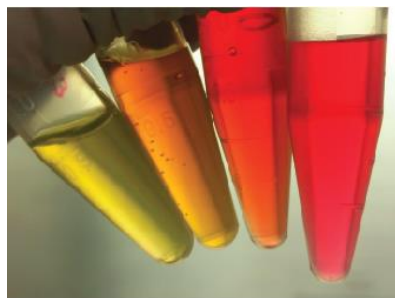


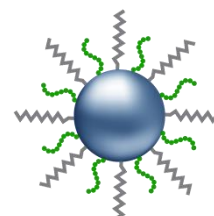
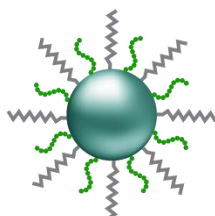
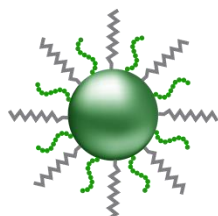
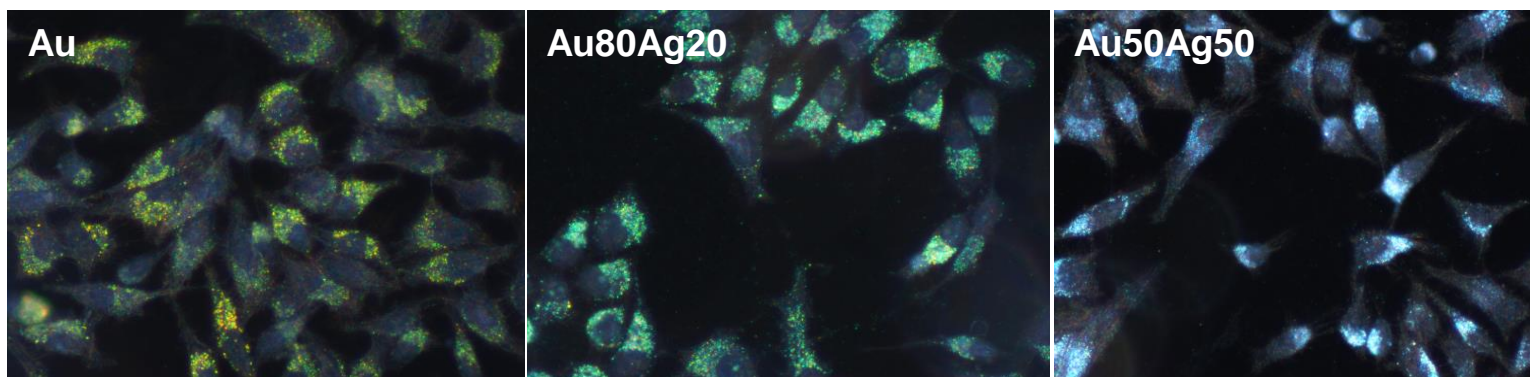
Multicolor Cellular Staining Using i-colloid™ Nanoparticles

i-colloid™ gold and gold-silver alloys

Noble metal alloy nanoparticles, which exhibit characteristic green, yellow, and orange optical signatures distinguishable from the brilliant red of colloidal gold, can be produced by changing the target composition in pulsed laser ablation (see Technical note T01) to silver and gold alloy. **These particles cannot be fabricated with precise control by any other means** and have great potential as optical tags, as they are more photostable and intense than organic dyes.



i-colloid™ nanoparticles as cellular stains



Au and AuAg alloy nanoparticles were conjugated with RGD peptides and stabilizing molecules (see Technical note T05) and introduced to human HeLa 229 cervical adenocarcinoma cells at 37 °C for 12 hours. Cells were washed 3 times with 1X PBS to remove excess unreacted nanoparticle conjugates before fixation with paraformaldehyde.

Cells were illuminated with white light on an optical microscope, and a 50x objective was used to acquire darkfield images over an exposure time of 2 seconds.

The three images above exhibit different colors attributable to the different scattering optical signatures of the Au, Au80Ag20, or Au50Ag50 nanoparticles. More, the RGD peptides enabled complete internalization within the HeLa cells, with no detectable signal on the cell membrane or in the perinuclear space.