

#### Video 1 Cysts collapsing in suspension

Title: Cysts in suspension begin to collapse upon template erosion

Legend: A549 epithelial cells attached to fibronectin-loaded photodegradable microsphere templates were suspended in phosphate-buffered saline, exposed to UV light to erode the templates, and a bright field image was acquired every 3 seconds. Playback is 5 frames per second and the video is looped 4 times.

Keywords: *in vitro*, epithelial cell, cyst, photochemistry, template, erosion

#### Video 2 Cyst stability in gel

Title: Cysts in hydrogel do not collapse upon template erosion

Legend: A549 epithelial cells attached to fibronectin-loaded photodegradable microsphere templates were embedded in a polymer hydrogel, exposed to UV light to erode the templates, and a bright field image was acquired every 3 seconds. Playback is 5 frames per second and the video is looped 4 times.

Keywords: *in vitro*, epithelial cell, cyst, hydrogel, photochemistry, template, erosion

#### Video 3 Mouse lung section

Title: 3D reconstruction of distal mouse lung tissue

Legend: Mouse lung sections (50  $\mu\text{m}$  thick) were stained with antibodies for an ATI phenotype marker (T1 $\alpha$ ; green), an ATII phenotype marker (surfactant protein C; red), and cell nucleus (DAPI; blue). Three-dimensional surface projections are shown for visualization of lung architecture.

Keywords: mouse, alveoli, epithelium, tissue section, immunostaining