

Microfluidic Cell Culture Devices

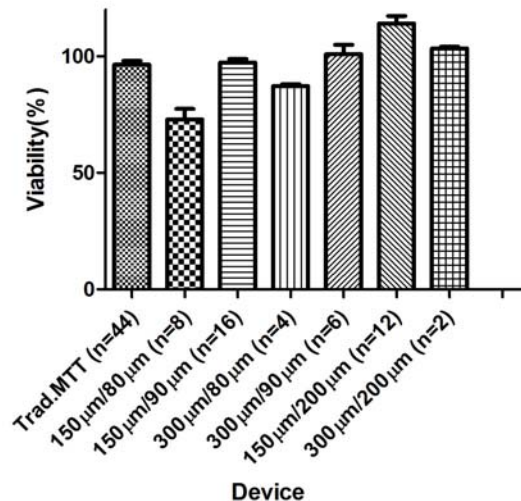
Christy L. Haynes (PI) and Donghyuk Kim

Department of Chemistry, University of Minnesota

NNIN Facility utilized: Nanofabrication Center

Creation of microfluidic devices to model cell exposure to injected nanoparticles

- ◆ Device has feature sizes and flow rates similar to venous system
- ◆ Present mesoporous silica nanoparticles followed by assessment of cell viability



Epithelial cell toxicity is influenced by nanoparticle flow rate

- ◆ Nanoparticle toxicity is higher in cells experiencing flow than static culture conditions
- ◆ This system more realistically models real-world nanoparticle exposure conditions