Friday, November 2nd, 2012, 3:30 P.M.
Room No. 109, DASAN bldg. 1st Floor

(Host: Prof. Hyuk-Sang Kwon / Language: English)

In vitro Microfluidic Cell Culture Assay

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A simple but robust microfluidic assay for three-dimensional and heterotypic cell culture has been developed by incorporating hydrogel between microchannels. Using this assay, well-defined biochemical and biophysical stimuli can be applied to multiple cell types interacting each other, thereby replicating many aspects of the in vivo microenvironment. Capabilities exist for time-dependent manipulation of flows and chemical gradients as well as high-resolution real-time imaging for observing spatial-temporal single cell behavior, cell-cell communication, cell-matrix interactions and cell population dynamics. These assays can be used to study cell survival, proliferation, migration, morphogenesis and differentiation under controlled conditions. Applications include the study of previously unexplored cellular interactions, and have already provided new insights into how biochemical and biophysical factors regulate interactions between populations of different cell types.