# Tissue Engineering in Microsystems

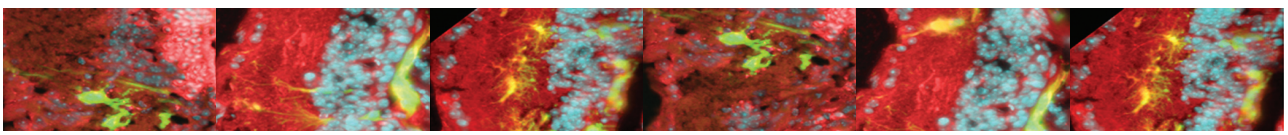
***Lab on a Chip*** has gathered together a series of articles highlighting the very best research on cell and tissue engineering in microsystems.

**Guest editors** Sangeeta Bhatia (MIT) and Christopher Chen (University of Pennsylvania) have commissioned articles from leading researchers to contribute to this *Lab on a Chip* issue, dedicated to state-of-the-art research on tissue engineering in microsystems.

**The issue includes** a critical review of cell micropatterning techniques; a tutorial review of perfusion culture of mammalian cells; and several high quality full papers on topics covering cell culture, patterning of biomaterials, stem cell differentiation, biocompatible implants, 3D tissue culture, embryoid bodies, cell cytotoxicity analysis and cell-cell communication.


"Tissue engineering is probably the most promising area of biology and biotechnology, this is an excellent issue featuring the best authors at the leading-edge of on-chip tissue engineering, — congratulations to Chris and Sangeeta"

Andreas Manz, ISAS, Dortmund



**PAPERS INCLUDE:**

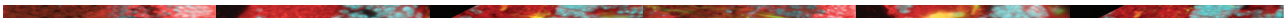
**A chip-based platform for the *in vitro* generation of tissues in three-dimensional organization**
Eric Gottwald, Stefan Giselbrecht, Caroline Augspurger, Brigitte Lahni, Nina Dambrowsky, Roman Truckenmüller, Volker Piotter, Thomas Gietzelt, Oliver Wendt, Wilhelm Pfleging, Alex Welle, Alexandra Rolletschek, Anna M. Wobus and Karl-Friedrich Weibezahn, *Lab Chip* 2007, **7** (6)

**Understanding microchannel culture: parameters involved in soluble factor signaling**
Hongmei Yu, Caroline M. Alexander and David J. Beebe, *Lab Chip* 2007, **7** (6)

**Efficient formation of uniform-sized embryoid bodies using a compartmentalized microchannel device**
Yu-suke Torisawa, Bor-han Chueh, Dongeun Huh, Poornapriya Ramamurthy, Therese M. Roth, Kate F. Barald and Shuichi Takayama, *Lab Chip* 2007, **7** (6)

**Micro-bioreactor array for controllable differentiation of human embryonic stem cells**
Elisa Figallo, Christopher Cannizzaro, Sharon Gerecht, Jason A. Burdick, Robert Langer, Nicola Elvassore and Gordana Vunjak-Novakovic, *Lab Chip* 2007, **7** (6)

**Survival, migration and differentiation of retinal progenitor cells transplanted on micro-machined poly(methylmethacrylate) scaffolds to the subretinal space**
Sarah Tao, Conan Young, Stephen Redenti, Yiqin Zhang, Henry Klassen, Tejal Desai, Michael J. Young, *Lab Chip* 2007, **7** (6)



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