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Lab on a Chip

Devices and applications at the micro- and nanoscale

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See Raehyun Kim, Jong Hwan Sung *et al.*, pp. 2609–2619.
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Inside cover
See Tanmay Mathur, Abhishek Jain *et al.*, pp. 2620–2631.
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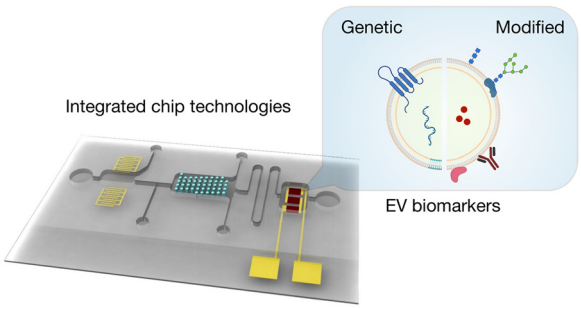
CRITICAL REVIEWS

2504

Integrated technologies for molecular profiling of genetic and modified biomarkers in extracellular vesicles

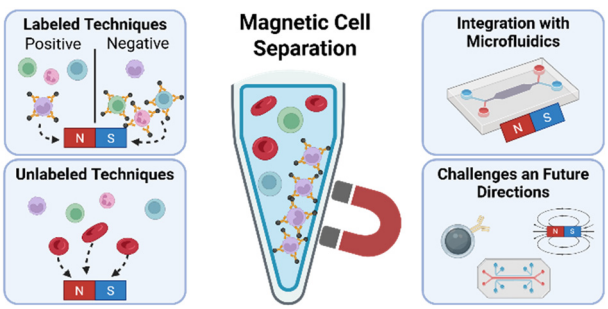
Li Zhang, Chi Yan Wong and Huilin Shao*



2521

Blood cell separation with magnetic techniques: a critical review

Karla Mercedes Paz González, Linh Nguyen T. Tran, Poornima Ramesh Iyer, Xian Wu, Hyeon Choe, Bahareh Rezaei, Shahriar Mostufa, Ebrahim Azizi, Ioannis H. Karampelas, Minxiang Zeng, Kai Wu, Jeffrey Chalmers and Jenifer Gómez-Pastora*



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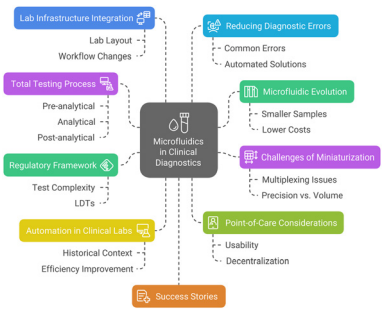
CRITICAL REVIEWS

2566

From Lab-on-a-Chip to Lab-on-a-Chip-in-the-Lab: a perspective of clinical laboratory medicine for the microtechnologist

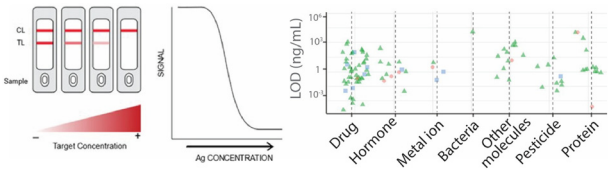
Kirby Fibben, Evelyn Kendall Williams, John D. Roback, Wilbur A. Lam* and David N. Alter*



2578

A comprehensive review of competitive lateral flow assays over the past decade

Julia Pedreira-Rincón, Lourdes Rivas, Joan Comenge, Vasso Skouridou, Daniel Camprubí-Ferrer, Jose Muñoz, Ciara K. O'Sullivan, Alejandro Chamorro-Garcia* and Claudio Parolo*

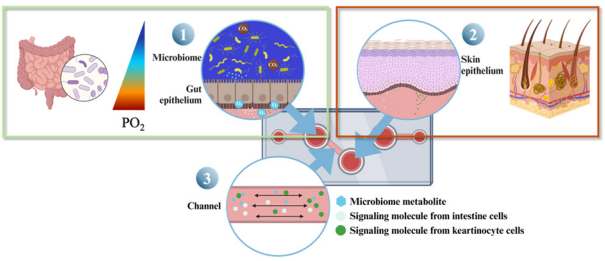


PAPERS

2609

Gut microbe–skin axis on a chip for reproducing the inflammatory crosstalk

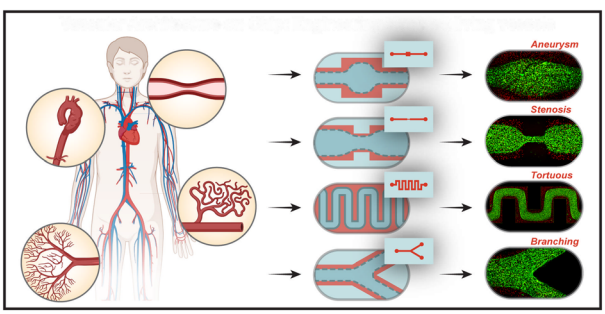
Byungho Ko, Jimin Son, Jong In Won, Bo Mi Kang, Chong Won Choi, Raehyun Kim* and Jong Hwan Sung*



2620

Vascular architecture-on-chip: engineering complex blood vessels for reproducing physiological and heterogeneous hemodynamics and endothelial function

Jennifer D. Lee, Ankit Kumar, Tanmay Mathur* and Abhishek Jain*



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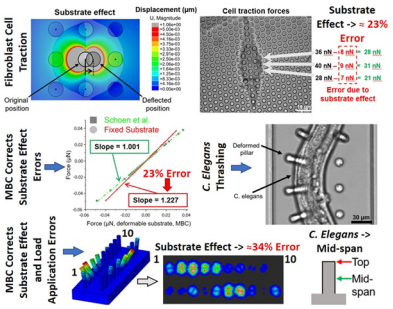
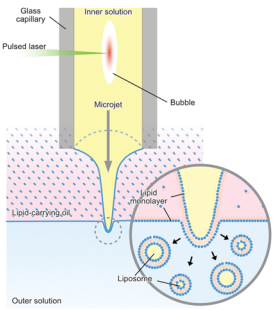
2632



MechanoBioCAD: a generalized semi-automated computational tool for mechanobiological studies

Navajit S. Baban, Christopher J. Stubbs and Yong-Ak Song*

2644



Generation of cell-sized liposomes using laser-induced microjets

Jiajue Ji, Shuma Kawai, Rina Takagi, Keiichiro Koiwai, Ryuji Kawano* and Yoshiyuki Tagawa*

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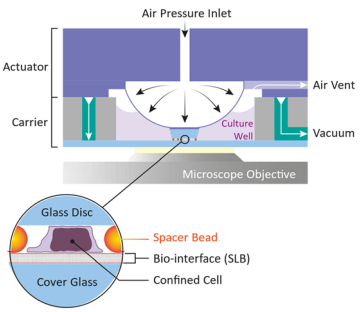

Microdevice for confinement of T-cells on functionalized bio-interfaces

Christoph Trenzinger,* Caroline Kopittke, Barbora Kalousková, Nemanja Šikanić, Marina Bishara, Gerhard J. Schütz and Mario Brameshuber*

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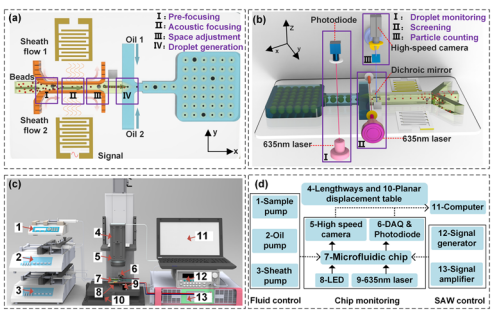

Elevating single-particle encapsulation in droplet microfluidics by utilizing surface acoustic wave and flow control

Chunhua He, Huasheng Zhuo, Canfeng Yang, Jianxin Wang, Xian Jiang, Fan Li, Chengxu Lin, Hai Yang, Tuying Yong, Xiangliang Yang, Zhiyong Liu,* Yan Ma, Lei Nie, Guanglan Liao* and Tielin Shi

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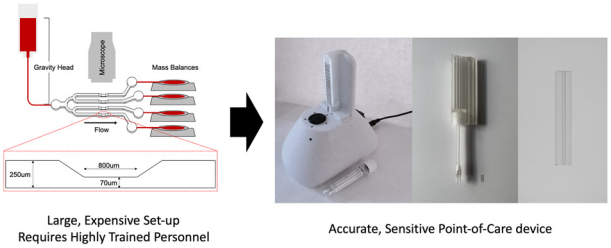
2684

Development of a novel point-of-care device to monitor arterial thrombosis

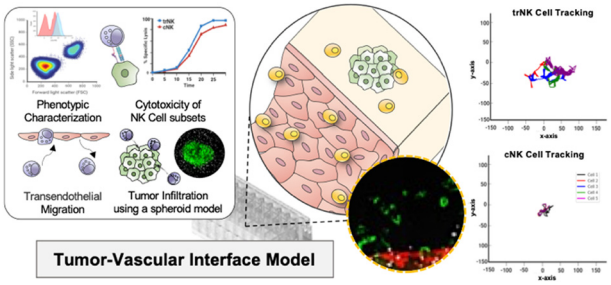
Christopher A. Bresette,* Viviana Claveria and David N. Ku*



2696

Evaluating migration and cytotoxicity of tissue-resident and conventional NK cells in a 3D microphysiological system using live-cell imaging

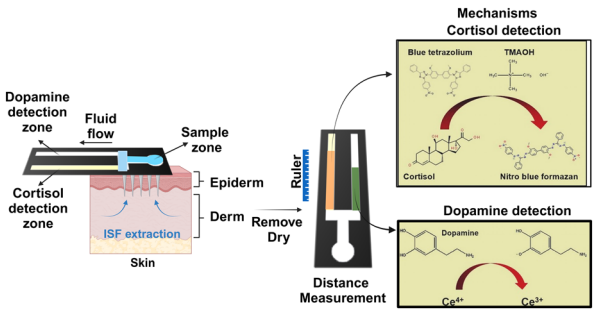
Hyeri Choi, June Ho Shin, Hyeonsu Jo, John B. Sunwoo* and Nool Li Jeon*



2708

Microneedle-integrated distance-based paper device for simultaneous transdermal detection of cortisol and dopamine

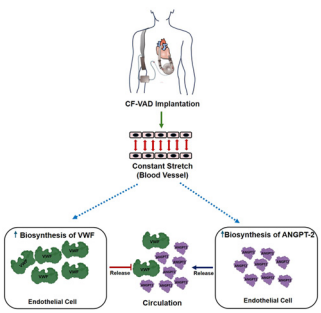
Danilo Martins dos Santos, Kawin Khachornsakkul and Sameer Sonkusale*



2722

Understanding the role of vascular stretch on modulation of VWF and ANGPT-2 in continuous flow left ventricular assist device (CF-VAD) patients

Jay Prakash Sah, Javier E. Dominguez De Leon, Ian C. Berg, Braden L. Cornelius, Daniel B. Dekle, Esraa Ismail, Xuanhong Cheng, Guruprasad A. Giridharan and Palaniappan Sethu*



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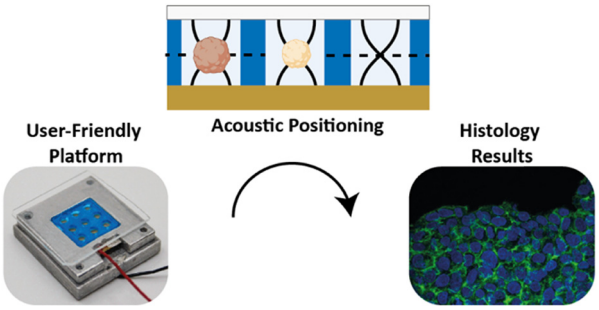
2732



An acoustic levitation platform for high-content histological analysis of 3D tissue culture

Emilie Vuille-dit-Bille, Céline Loussert Fonta, Sarah Heub, Stéphanie Boder-Pasche, Mahmut Selman Sakar* and Gilles Weder*

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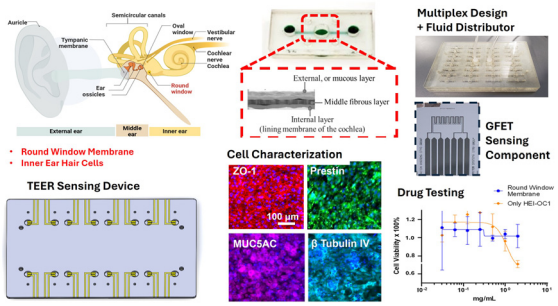

An integrative round window membrane/cochlear microphysiological system with sensing components for the study of real-time drug response

Jing Bai,* Olurotimi Bolonduro, Pavlo Gordiichuk, R. Madison Green, Henry Hung-Li Chung, Ken Mahmud and Dmitry Shvartsman

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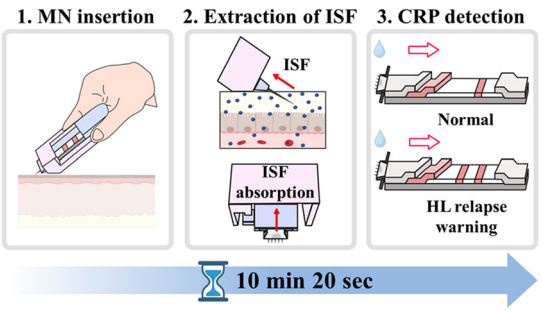

Development of a high-performance sliding microneedle-lateral flow immunoassay strip device for ultra-rapid point-of-care diagnosis

Soo-bin Yu and Jae Hwan Jung*

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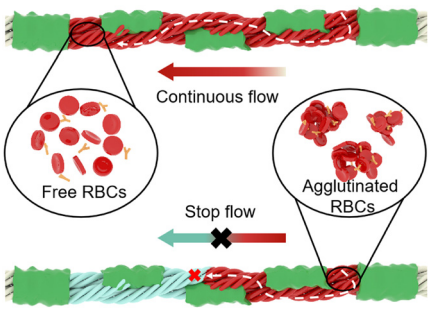

3D microfluidic analytical device on a single thread for smart point-of-care blood typing

Tonghuan Zhan, Hui Niu, Yange Huang, Shuqiang Min, Xianchang Wu, Heng Wang and Bing Xu*

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PAPERS

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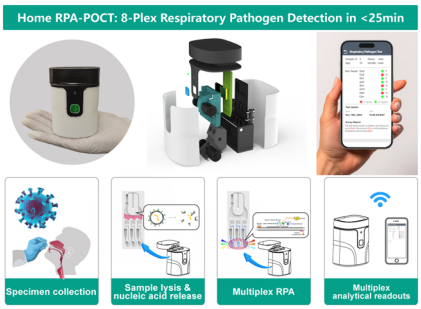
Handheld RPA-based molecular POCT system for rapid, low-cost 8-plexed detection of respiratory pathogens at home

Yunfeng Zai, Chao Min, Zunliang Wang,* Yongjun Ding, Enben Su* and Nongyue He



CORRECTION

2795

Correction: The effect of cyclic fluid perfusion on the proinflammatory tissue environment in osteoarthritis using equine joint-on-a-chip models

Johannes Heidenberger, Eva I. Reihs, Jonathan Strauss, Martin Frauenlob, Sinan Gültekin, Iris Gerner, Stefan Toegel, Peter Ertl, Reinhard Windhager, Florien Jenner and Mario Rothbauer*