

# Lab on a Chip

## Devices and applications at the micro- and nanoscale rsc.li/loc

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### IN THIS ISSUE

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**Cover**  
See Raehyun Kim, Jong Hwan Sung *et al.*, pp. 2609–2619.  
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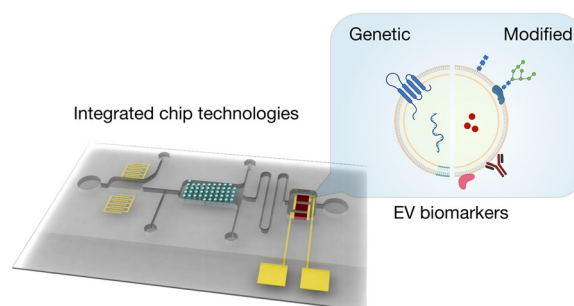
**Inside cover**  
See Tanmay Mathur, Abhishek Jain *et al.*, pp. 2620–2631.  
Image reproduced by permission of Abhishek Jain from *Lab Chip*, 2025, 25, 2620.

### CRITICAL REVIEWS

2504

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

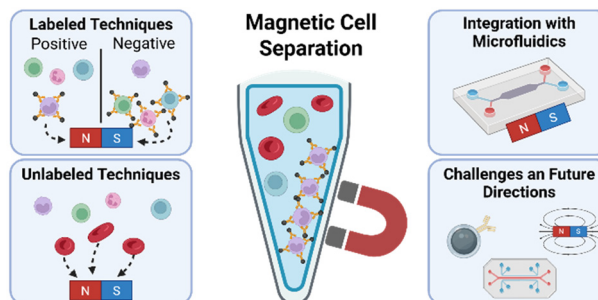
Li Zhang, Chi Yan Wong and Huilin Shao\*



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\*



# RSC Applied Interfaces

GOLD  
OPEN  
ACCESS

## Interfacial and surface research with an applied focus

### Interdisciplinary and open access

[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)

Fundamental questions  
Elemental answers

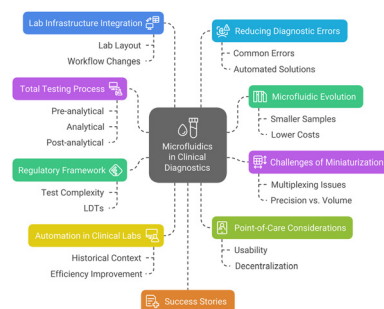


## CRITICAL REVIEWS

2566

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

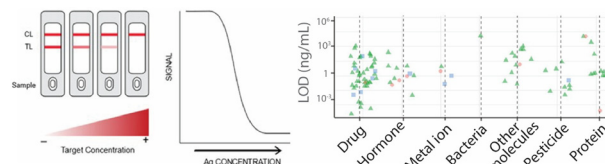
Kirby Fibben, Evelyn Kendall Williams, John D. Roback, Wilbur A. Lam\* and David N. Alter\*



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-García\* and Claudio Parolo\*

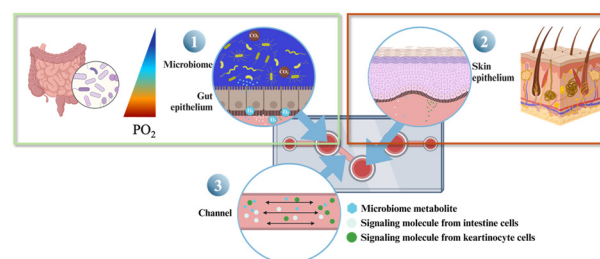


## PAPERS

2609

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

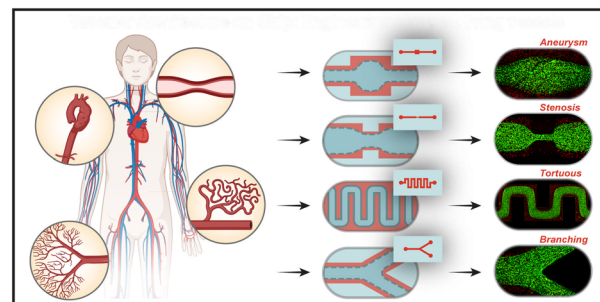
Byungho Ko, Jimin Son, Jong In Won, Bo Mi Kang, Chong Won Choi, Raehyun Kim\* and Jong Hwan Sung\*

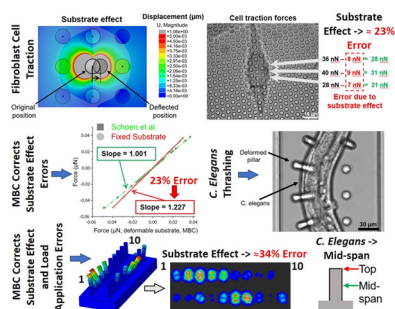


2620

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

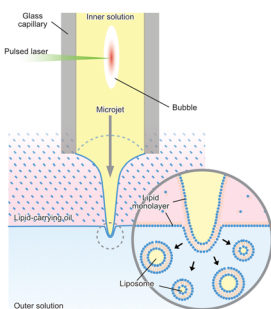
Jennifer D. Lee, Ankit Kumar, Tanmay Mathur\* and Abhishek Jain\*





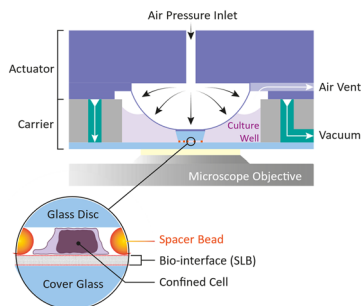
## MechanoBioCAD: a generalized semi-automated computational tool for mechanobiological studies

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



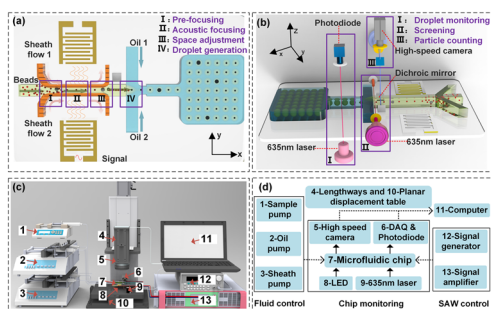
## Generation of cell-sized liposomes using laser-induced microjets

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



## 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\*



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

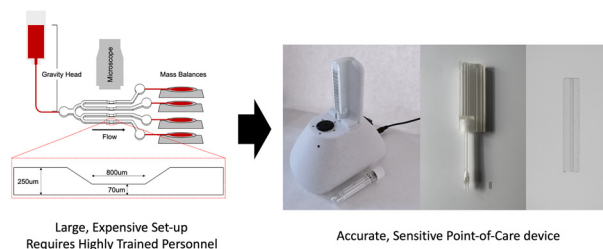
Chunhua He, Huasheng Zhuo, Canfeng Yang, Jianxin Wang, Xian Jiang, Fan Li, Chengxu Lin, Hai Yang, Tuying Yong, Xiangliang Yang, Zhiyong Liu,\* Yan Ma, Lei Nie, Guanglan Liao\* and Tielin Shi



2684

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

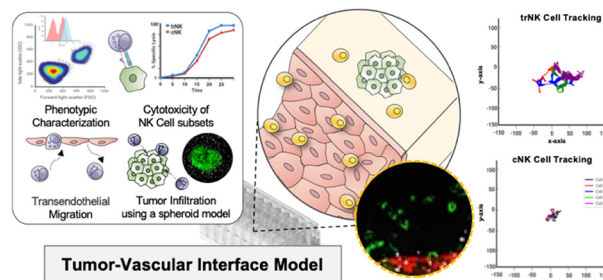
Christopher A. Bresette,\* Viviana Claveria and David N. Ku\*



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

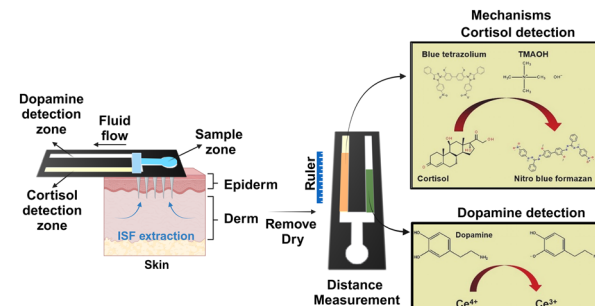
Hyeri Choi, June Ho Shin, Hyeonsu Jo, John B. Sunwoo\* and Nool Li Jeon\*



2708

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

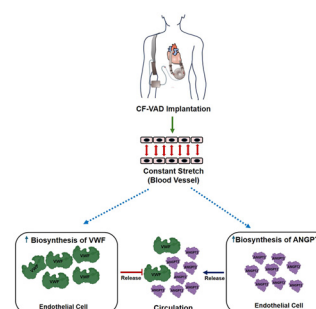
Danilo Martins dos Santos, Kawin Khachornsakkul and Sameer Sonkusale\*



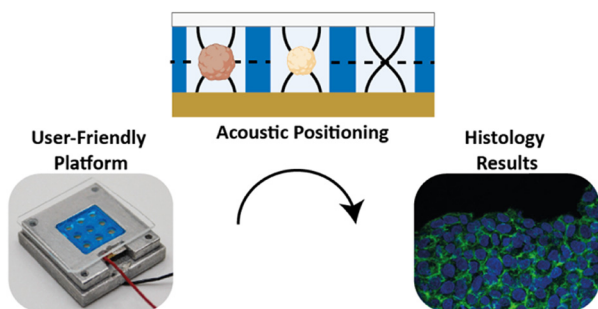
2722

## 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\*



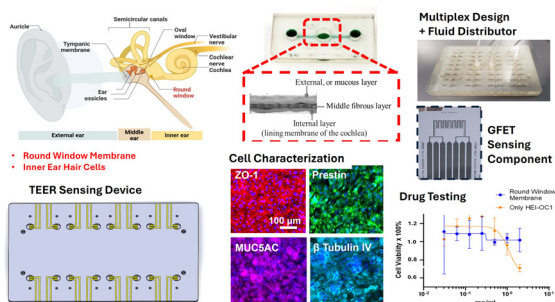
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### An acoustic levitation platform for high-content histological analysis of 3D tissue culture

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

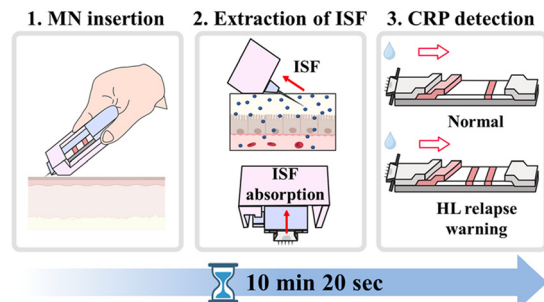
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### An integrative round window membrane/cochlear microphysiological system with sensing components for the study of real-time drug response

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

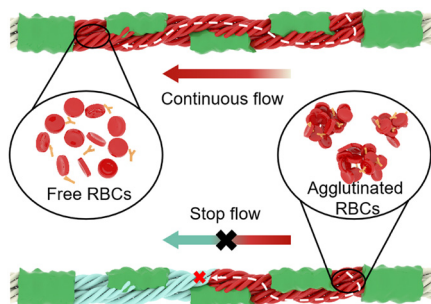
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### Development of a high-performance sliding microneedle-lateral flow immunoassay strip device for ultra-rapid point-of-care diagnosis

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\*



## PAPERS

2780

## 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

Home RPA-POCT: 8-Plex Respiratory Pathogen Detection in <25min



## 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. Reihls, Jonathan Strauss, Martin Frauenlob, Sinan Gültekin, Iris Gerner, Stefan Toegel, Peter Ertl, Reinhard Windhager, Florian Jenner and Mario Rothbauer\*

