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Author: Ruizhi Ning, Feng Wang, Ling Lin

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Biomaterial-based microfluidics for cell culture and analysis

Ruizhi Ning [a], Feng Wang [a], Ling Lin[a,b,*]

[a.] *State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, P. R. China*

[b.] *Department of Bioengineering, School of Engineering, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan*

Highlights

- We reviewed materials for microfluidic fabrication and summarized three tendencies.
- Biomaterials play key role in 2D and 3D cell culture on-chip.
- Organ-on-chip was introduced with promising potential.
- The ways biomaterials participating in cell analysis were elaborated.

ABSTRACT

To make the microfluidics more functional and sensitive in biological applications, biomaterials for chip organization and function turn to be the key factor for leading microfluidics to a new area. Biomaterials used in microfluidics turned to be more various, complicated, and integrated, and polymers gradually take the chief position in bio microfluidics. The previous stage for microfluidics is microanalyzing in chemical and biology, including biomolecular analyzing. We believe that the biomaterial-based micro platform will take main responsibility for cell culture and analyzing *in vitro* in future, and it will bring a revolution to biology and medicine research and applications. In this review, we first conclude commonly used biomaterials in microfluidic construction. Then, biomaterials for cell culture on chip in 2D and 3D, as well as organ-on-chip mimicking are elaborated. Finally, cell observation and analysis also

* Corresponding author: Tel/Fax: +86-10- 64433585, E-mail: lin@icl.t.u-tokyo.ac.jp (L. Lin)