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1. Education

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석사: 가톨릭대학교 의학과 (2005)
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2. Experience

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2017 ~ 현재 고려대학교 기계공학과, 연구교수
2011 ~ 2017 Max Planck Institute, Independent Research Scientist

제목

오가노이드를 이용한 기초 및 중개연구를 위한 플랫폼

Organoids: A New Platform in Basic and Translational Research

초록

As the importance of organoids as a model for basic biological and clinical applications is emphasized, there is still an unmet need to generate standardized organoids of both functional complexity and scale, and as a result, recent advances in organoid culture technology have been made.

Here, we demonstrated advanced hydrogel-based, fluid organoid production and a scalable culture platform using patient derived cancer organoids. The new prefabricated hydraulic culture platform, installed with a U-shaped strip of 9 microwells, is functionally compatible with the Matrigel platform and has significantly improved consistency, uniformity and reproducibility of organoid production. Importantly, the hydro culture platform induces a distinct transcriptomic change compared to Matrigel platform, resulting in more primitive cancer stem cells maintenance, differentiation inhibition and differential drug sensitivity. Taken together, in vitro culture type might reprogram the transcriptional pattern and affect the functional behavior of organoids.

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