**Microfluidic and microsensor structures for body-on-a-chip systems.**

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Abstract:

Recent technological advances in microfabrication techniques have enabled the realization of microphysiological systems capable of recapitulating aspects of human physiology in vitro with great fidelity. However, obtaining information from samples in real time still poses major challenges. We developed a versatile microfluidic platform for formation, cultivation, and analysis of fluidically interconnected organotypic spherical 3D microtissues of different cell types. Sensor modules were designed as small plug-ins, which do not interfere with the microfluidic functions.