Special Issue

Cell Culture Platforms and Microphysiological Systems

Message from the Guest Editor

The field of biomimetics combines engineering, chemistry, and biology to create systems that mimic biological environments. In-vitro models that integrate those biomimetic properties to in vitro culture platforms are usually referred to as microphysiological systems. However, they go by other names as well, like organ-on-a-chip, integrated cellular systems, or biomimetic microsystems. A commonly accepted definition of an organ-on-a-chip is a system that integrates three characteristics: co-culture, 3D, and microfluidics. These cell culture models and their associated techniques have the potential to improve disease modeling, pathogeneses understanding, and treatment. In this Special Issue, we are inviting researchers to present their reviews and original paper investigations describing current developments and findings in the field of 2D and 3D biomimetic cell culture platforms. From system evaluation (e.g., reproducibility of experiments, system robustness, in vivo comparison benchmarks, etc.) to advances in translational fields like tissue regeneration, tumor progression, drug discovery and evaluation, and others.

Guest Editor

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