# Special Issue

# Brain-on-Chip Platforms: Advancing Neuroscience and Drug Discovery

### Message from the Guest Editor

Neurological and psychiatric disorders, such as Alzheimer's disease (AD), Parkinson's disease (PD), and schizophrenia, remain difficult to study and treat due to the complexity of the human brain. Traditional animal models and 2D cultures often fail to replicate human-specific brain architecture and function, limiting the success of drug development. Brain-on-chip technology, combined with induced pluripotent stem cells (iPSCs) and brain organoid models, offers a transformative approach to studying brain function and disease. These platforms integrate microfluidics, bioengineering, and bioelectronics to recreate key aspects of brain physiology, including neuronal networks, blood–brain barrier (BBB) function, and neuroinflammation, providing more accurate disease models and drug testing environments.

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## Editor-in-Chief

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