Special Issue

Neuroscience Through Electrophysiology: Current Trends and Future Directions

Message from the Guest Editor

This Special Issue highlights the latest advancements in electrophysiological methods and their applications in modern neuroscience. The collection covers a wide range of topics, including innovations in in vitro patch-clamp whole-cell recording, high-density multi-electrode arrays, the optogenetic modulation of neural circuits, and the integration of electrophysiology with neuroimaging and computational modeling. These approaches provide deeper insights into neural circuit function, synaptic plasticity, and the pathophysiology of neurodevelopmental and neurodegenerative disorders.

Furthermore, the Issue explores the future trajectory of electrophysiology, focusing on emerging technologies such as brain–machine interfaces, artificial intelligence-driven data analysis, and non-invasive electrophysiological techniques for clinical applications. This discussion highlights electrophysiology's translational potential, which includes enhancing brain–machine interfaces and personalizing treatments for neuropsychiatric conditions.

Guest Editor

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Message from the Editor-in-Chief

Biomedicines (ISSN 2227-9059) is an open access journal devoted to all aspects of research on human health and disease, the discovery and characterization of new therapeutic targets, therapeutic strategies, and research of naturally driven biomedicines, pharmaceuticals, and biopharmaceutical products. Topics include pathogenesis mechanisms of diseases, translational medical research, biomaterial in biomedical research, natural bioactive molecules, biologics, vaccines, gene therapies, cell-based therapies, targeted specific antibodies, recombinant therapeutic proteins, nanobiotechnology driven products, targeted therapy, bioimaging, biosensors, biomarkers, and biosimilars. The journal is open for publication of studies conducted at the basic science and preclinical research levels. We invite you to consider submitting your work to Biomedicines, be it original research, review articles, or developing Special Issues of current key topics.

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