Special Issue

Theoretical and Experimental Links between Ion Channels and Excitable Cells from Biophysical Perspective

Message from the Guest Editor

Transmembrane ion channels are pivotal in various physiological processes, facilitating the movement of ions across the cell membrane in accordance with their respective electrochemical gradients. Understanding ion channel kinetics is crucial for unraveling the dynamics of cellular signaling, electrical excitability, and other physiological processes. Moreover, ion channel dysfunction can lead to a wide range of pathophysiological disorders, affecting various organ systems and physiological processes. Theoretical modeling and simulation, particularly in neural networks, involves creating mathematical models that describe the behavior of neurons and the interactions between them, and then simulating these models to study the dynamics of neural networks. This approach allows researchers to gain insights into how neural networks process information, learn, and perform various functions. Recently, research in this area has been particularly popular. Therefore, we welcome investigators in this field to publish their findings on this topic in this Special Issue, so that they may be disseminated within the scientific community.

Guest Editor

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Deadline for manuscript submissions

closed (31 October 2024)

Biophysica

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Impact Factor 1.4
CiteScore 2.3

mdpi.com/si/200557

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