Special Issue

Fiftieth Anniversary of the Fluid Mosaic Model of Cell Membranes: From Lipid Structure to Biomedicines

Message from the Guest Editors

After several attempts to present a plausible model to explain the structure and functions of cell membranes, Singer and Nicolson published in 1972 a seminal paper introducing the Fluid Mosaic model of the plasma membrane to explain the dynamic organization of lipids that form a lipid bilayer and their association with membrane-interacting proteins. Fifty years after this publication, the model continues to be valid, and the new concepts introduced on membrane structure have validated the original lipid bilayer architecture with intercalated and bound proteins, extending the initial model with new aspects that highlight the richness and diversity of membrane structures, such as membrane microdomains, lipid phases, and membrane–cytoskeleton interactions, among others. The scope of this issue is to describe important aspects of membrane structure in relation to its cellular functions, pathological alterations and the development of biomedicines and supplements from the basic knowledge assembled during the 50 years after the publication of the Fluid Mosaic model.

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