

Special Issue

Molecular Motors in Neuronal Homeostasis and Neurodegeneration

Message from the Guest Editors

Molecular motors stand as the unrecognized protagonists mediating the movements essential for the functioning of living organisms. These nanoscale machines, such as kinesins, dyneins, etc. powered by the energy currency of the cell, navigate through the complex cellular environment, transporting cargo, facilitating cellular division, and contributing to various physiological processes. This Special Issue aims to elucidate the mechanisms underlying motor protein-mediated transport processes and their implications in maintaining neuronal health or precipitating neurodegenerative conditions. Topics of interest include the role of motors in neuronal development (neurogenesis), cellular trafficking, and synaptic plasticity, and the involvement of molecular motors in glial cell functions and neuroimmunomodulation. We are also interested in studies that potentially implicate molecular motors as putative biomarkers for early diagnosis and their potential to enable the precise targeting of therapeutics toward the affected neuronal populations or even molecules or gene therapies designed to modulate motor activity or enhance axonal transport to ameliorate neurodegenerative processes.

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