Special Issue

Molecular Regulation of Learning-induced Neuronal Plasticity

Message from the Guest Editors

Neuronal plasticity refers to the capacity of neurons to adapt their synaptic connections in an activity-dependent manner. This adaptation is thought to underlie both learning throughout the lifespan and functional recovery after brain lesions. In particular, for decades the experimental study of neuronal plasticity has mainly involved the electrophysiology of synapses combined with the neuropharmacology of neurotransmitters. Today, the field has dramatically expanded, and a plethora of molecules regulating neuronal plasticity both at the functional (i.e., long-term potentiation of depression) and the morphological level (i.e., dendritic spine dynamics) have been discovered. However, despite the large body of excellent existing literature, molecular processes regulating learning-induced neuronal plasticity are not well understood. This Special Issue, therefore, focuses on review and original research articles that help gathering further details on the cellular and molecular regulation of neuronal plasticity in the hippocampus and other areas involved in the processes of memory formation and consolidation.

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You are invited to contribute a research article or a comprehensive review for consideration and publication in *Brain Sciences* (ISSN 2076-3425). *Brain Sciences* is an open access, peer-reviewed scientific journal that publishes original articles, critical reviews, research notes, and short communications on neuroscience. The scientific community and the general public can access the content free of charge as soon as it is published.

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