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Synapses: Molecular Organization, Regulation and Synaptic Function

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Message from the Guest Editor

Synapses are highly organized subcellular compartments specializing in synaptic transmission and many forms of synaptic plasticity. Glutamate receptors, GABAA receptors, signaling molecules, and cell adhesion molecules constitute essential components in supporting synaptic function. Efficient signal transduction at synapses requires scaffolding proteins which bring signaling molecules in close physical proximity to their effectors, forming a signaling center. The activity-dependent reorganization of signaling molecules to the physical proximity of their effector via trafficking/regulation of their scaffolding proteins is critical for the modification of multiple classes of proteins.

Understanding how signaling molecules are regulated by their scaffolding proteins and other modulators will help elucidate the panoply of mechanisms that underlie synaptic plasticity. Moreover, understanding how this organization is perturbed in different neurological diseases will help identify putative therapeutic pathways. We invite research or review articles on any subjects related to molecular organization and its regulation associated with synapse function and neural plasticity.



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Special Issue



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