Special Issue

Towards Understanding the Functional Connectivity of the Locus Coeruleus

Message from the Guest Editor

The discovery of modulatory neurotransmitters several decades ago originated unprecedented research in all fields of neuroscience. The research on neuromodulation has rapidly gained significant translational value as it became evident that neuromodulatory disbalance underlies many neuropsychiatric disorders. We face an urgent need for better understanding the principles of differentiated neuromodulation within diverse neural networks. This Special Issue will focus on the locus coeruleus (LC), a core of the brain noradrenergic system. The phylogenetic and developmental origin of the functional connectivity of the noradrenergic pathways remains to be further explored. Identifying the distinct subpopulations of LC neurons that regulate specific cognitive processes will advance the search for more efficient correction of pathological brain states. This Special Issue aims to elucidate the developmental origin of the LC neuron diversity, identify cell-specific markers, and the role of specific noradrenergic pathways for different aspects of behavior and cognition. Comparative anatomy and functional connectivity studies present the highest priority.

Guest Editor

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