Special Issue

How Epigenetics Shapes the Nervous System

Message from the Guest Editor

Epigenetic mechanisms, including DNA methylation, histone modifications, and non-coding RNAs, regulate gene expression, influencing neural differentiation, synaptic remodeling, and cognitive processes. These mechanisms play a crucial role in the development, function, and plasticity of the nervous system. Emerging evidence also links altered epigenetic regulation to neurological disorders, neurodegenerative diseases, and psychiatric conditions, offering novel insights into disease pathogenesis and potential therapeutic strategies. This Special Issue aims to bring together cutting-edge research and reviews exploring the diverse roles of epigenetic modifications in neural development, function, and disease. We welcome contributions exploring the fundamental mechanisms of neuro-epigenetics and translational research investigating altered epigenetic mechanisms underlying neurological disorders, as well as studies exploring the therapeutic potential of targeting the epigenome. We seek to advance our understanding of how epigenetics shapes nervous system biology and contributes to neuropathology, paving the way for novel diagnostic and therapeutic strategies.

Guest Editor

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