Special Issue

Epigenetics in the Central Nervous System

Message from the Guest Editor

Epigenetic mechanisms act at the interface of genetic and environmental influences on human phenotype and have been implicated to be mediators of essential functions in the central nervous system. The major epigenetic mechanisms include DNA methylation, histone modification, and non-coding RNA (ncRNA)-associated gene silencing. These mechanisms play an important role in the regulation of gene expression and silencing, neuron–glial differentiation, neurogenesis, the regulation of neurobehavior, and neuroplasticity. Experiments with cellular and animal models have demonstrated that various epigenetic modifications can affect cognition in different ways, from severe dysfunction to substantial improvement. In humans, epigenetic dysregulation has been known to underlie a number of disorders that are accompanied by cognitive impairment. In this Special Issue, we will explore the epigenetic mechanisms that regulate the central nervous system and how their disruption can lead to cognitive dysfunction and neurodevelopmental and/or neurodegenerative disorders.

Guest Editor

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