

Special Issue

Role of the Kynurenine System in Neurological Disorders

Message from the Guest Editors

The kynurenine system is a metabolic pathway that breaks down the amino acid tryptophan into several bioactive compounds, including kynurenine and its metabolites. This pathway plays a critical role in regulating immune responses, neuroinflammation, and neurotransmitter balance in the brain. Recent research has highlighted the significance of the kynurenine system in neurological disorders, particularly due to the production of neurotoxic and neuroprotective metabolites. In neuroinflammatory diseases, an imbalance between these metabolites contributes to disease progression. Chronic activation of the immune system, as seen in neurodegenerative disorders, increases the production of QUIN, leading to further neuronal damage. This shift towards neurotoxic metabolite production has been implicated in conditions such as depression, schizophrenia, and Huntington's disease. Understanding the regulation of the kynurenine pathway and its role in the central nervous system provides a promising avenue for developing novel therapeutic strategies targeting neuroinflammation and neurodegeneration. Modulating this pathway may help restore balance and prevent further neurological damage.

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