Mediators of Inflammation

Special Issue on

Neuroinflammation and Neurodegeneration: Biology and New Targets for Drug Development

CALL FOR PAPERS

A growing number of studies have explored the interaction between the nervous and immune systems during the development of neurological disorders. The neuroimmunology appears to have great potential to explain the nervous system disease mechanism and reveal therapeutic targets. The central nervous system (CNS) is an environment considered "immunologically privileged." This means that, under physiological conditions, neural tissue is protected by the blood brain barrier, which does not allow the passage of peripheral immune cells and whose resident cells such as glial cells express little MHC-I and II receptors as well as proinflammatory cytokines. However, in damage situation, glial cells show increased expression of MHC, Toll-receptors, and proinflammatory cytokines (such as TNF-α, IFN-γ, IL-1β, and IL-6). Innate immune response mediated by glial cells seems to be crucial for the progression of many neurodegenerative diseases including Alzheimer disease (AD), multiple sclerosis (MS), Parkinson's disease (PD), and amyotrophic lateral sclerosis (ALS).

Specific inflammatory profiles are associated to various neurodegenerative diseases; however, it is still unknown if the inflammatory process began before or after the pathological alterations. In any case, the unresolved neuroinflammation may exacerbate the disease progression by cytokine-induced injury. Therefore, the use of specific anti-inflammatory drugs may contribute to neurotoxicity reduction, thereby resulting in clinical benefit.

This special issue is intended to present high quality, original research articles as well as review articles focused on the studies of neurobiology and drug development for nervous system disorders.

Potential topics include, but are not limited to:

- The role of cyclic nucleotides (cAMP/cGMP) in cognitive impairment such as Alzheimer disease
- New proposals of anti-inflammatory and antioxidants drugs for nervous system diseases
- Immunomodulatory regulation of demyelinating diseases, such as multiple sclerosis
- Signaling pathways of neurogenesis and potential drug targeting
- Ischemia and neurological functional recovery from stroke
- Peripheral nerve injury and immunomodulation
- Therapeutic strategy for the treatment of peripheral neuropathic pain
- Sepsis-associated encephalopathy and cognitive impairment

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/mi/nndd/.

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