

## Special Issue

# Immune Functions of Astrocytes

### Message from the Guest Editors

Astrocytes, specialized glial cells in the central nervous system (CNS), have a plethora of functions in the brain and the spinal cord. Among others, astrocytes maintain the integrity of the blood–brain barrier and control blood flow; constitute a tripartite synapse and thus affect learning and memory consolidation by gliotransmission and signal integration; and provide neuronal support and control water homeostasis and glucose metabolism. Namely, following CNS injury or infection, astrocytes change their morphological, molecular, and functional features; they become reactive and participate in the formation of glial scars together with microglial cells, pericytes, ependymal cells, and the extra-cellular matrix. Moreover, in an injured CNS, astrocytes critically affect innate and adaptive immune responses by releasing several cytokines and chemokines, thereby either exacerbating inflammatory processes and increasing tissue damage, or promoting immunosuppression and tissue repair. This Special Issue of the *International Journal of Molecular Sciences* will focus on the immune functions of astrocytes in connection to the CNS trauma and regeneration.

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The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

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