Special Issue

Detrimental and Beneficial Roles of Glial Cells After Neural Disorders

Message from the Guest Editor

For many years, the neuronocentric view of the CNS centered neurons in the pathophysiology of acute and chronic neural disorders. However, many studies established that glial cells play a pivotal role in physiological and pathological CNS processes. Following neural disorders, astrocytes and microglia display different phenotypes contributing to repair and damage, called the Janus Face of glial cells. Microglia can be detrimental by releasing molecules causing secondary tissue damage but may also contribute to repair. In AD, microglia may remove beta-amyloid plaques, but continuous exposure induces a detrimental phenotype contributing to neurodegeneration. Similar occurs after alpha-synuclein aggregation in PD. These phenotypes, named M1 and M2, likely result from ligands in the pathological environment. Astrocytes also display phenotypes with detrimental and beneficial roles after CNS disorders. Oligodendrocytes protect neurons and increase action potential speed but impair axon regeneration with inhibitors like NOGO-A. This Special Issue invites papers and reviews exploring glial cell duality after CNS damage or repair. Neuroprotective or regenerative approaches are welcome.

Guest Editor

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