



Oxidative Medicine and Cellular Longevity

Special Issue on **Glial Cells in Aging and Neurodegeneration: Passive Spectators or Active Players?**

CALL FOR PAPERS

Known since the middle of the 19th century, glial cells were initially regarded as the brain's "glue," nothing more than scaffolding cells. Since those days, our understanding of the physiological and pathological roles of glial cells has grown deeper and deeper. Firstly, glial cells comprise different cell types with different embryological origins and distinct functions, and they can be broadly classified into macroglia (including astrocytes and oligodendrocytes in the Central Nervous System (CNS) and Schwann cells in the Peripheral Nervous System (PNS)) and microglia. There is increasing evidence that their physiological functions range from providing trophic and metabolic support to neurons to modulating synaptic transmission. In pathological conditions, glial cells change their phenotype, a phenomenon described as reactive gliosis, and as well, they actively contribute to harmful cascades in the pathogenesis of several CNS disorders. Unsuspected until recently, glial cells play positive and negative roles in the metabolism of reactive oxygen species (ROS) and other oxidative stressors.

With this special issue, we invite authors to contribute original research articles and reviews addressing such varieties of roles of glial cells as keepers of physiological brain activity, during healthy aging and in neurological and psychiatric conditions.

Potential topics include, but are not limited to:

- ▶ Glial cells as master regulators of brain homeostasis
- ▶ Mechanisms of glia-mediated modulation of synaptic transmission
- ▶ Healthy aging-related changes in glial cells functions
- ▶ Glial cells and inflammation
- ▶ Mechanisms of ROS detoxification and production in glial cells
- ▶ Impact of ROS on glial cell function
- ▶ Non-cell autonomous oxidative stress in neurodegeneration
- ▶ Glial cells impact on regeneration after injury and on chronic neurodegenerative conditions
- ▶ Use of iPS-derived glial cells as tools to investigate non-cell autonomous mechanisms of neurodegeneration
- ▶ Influence of toxic chemicals on glial cell function
- ▶ Therapies targeting glial cells to counteract neurodegeneration

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/omcl/psap/>.

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