



Neural Plasticity

Special Issue on

Role of Energy Metabolism on Brain Functions

CALL FOR PAPERS

The link between energy metabolism and brain functions is an emerging and exciting topic in neuroscience. During the last years different studies provide several evidences regarding how energy metabolism can modulate brain functions ranging from behavior to synaptic plasticity and brain development. In fact, the energy requirements of the brain are very high, and tight regulatory mechanisms operate to ensure adequate spatial and temporal delivery of energy substrates that is crucial for the regulation of brain activity. Moreover, deficits on brain cellular metabolism are related to different pathological conditions (e.g., neurodegenerative or psychiatric disorders). Importantly, glial cells (astrocytes and microglia), different types of neurons, and intracellular organelles (e.g., mitochondria) are key elements for the orchestration of energy metabolism in the brain. Thus, the field of neuroscience needs new findings and tools to better understand the whole picture of how energy metabolism regulates brain functions and vice versa.

For this reason, in this special issue, we invite investigators to contribute original research articles as well as review articles that will stimulate the continuing efforts to seek to understand the relationship between energy metabolism and brain functions in physiological and pathological conditions.

Potential topics include, but are not limited to:

- ▶ Neuron-astrocyte metabolic coupling
- ▶ Role of energy metabolism in pathological conditions (e.g., neurodevelopmental disorders, neurodegenerative diseases, and stroke conditions)
- ▶ Role of brain metabolism in physiological functions (e.g., behavior and synaptic plasticity)
- ▶ Impact of microglia in energy metabolism in the brain
- ▶ Impact of peripheral energy metabolism into the central nervous system
- ▶ Role of intracellular organelles (e.g., mitochondria) in modulating brain functions
- ▶ Possible therapeutic approaches focused on energy metabolism in the brain
- ▶ New methods to study energy metabolism in the brain

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

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