Tentative Outline

Special Issue for Central Nervous System Agents in Medicinal Chemistry

TITLE of the thematic issue: Astrogliosis in acute and chronic neurodegenerative pathologies: A double edged sword

Guest Editor: George E. Barreto
Co-Guest Editors: Gjumrakch Aliev, Ramón Cacabelos

Aims & Scope:

Astrocytes are dynamically involved in synaptic transmission, metabolic and ionic homeostasis, and inflammatory maintenance of the blood-brain barrier. Advances in our understanding of astrocytes include new observations about their structure, organization, and function. Astrocytes play an active and important role in the pathophysiology of brain damage. Cerebral acute and chronic inflammation may impair mitochondrial functions, leading to reduced energy supply compromising important biological functions such as cellular repair and remodelation upon damage. In this context, astrocytes play a role in organizing the tissue response to inflammation and this might involve controversial functions. For example, recent works have demonstrated a protective role of reactive astrocytes, while others have pointed to an inhibitory role of astrocytes in modulating inflammation and recovery following injury. Reactive astrogliosis is a complex phenomenon that includes a mixture of positive and negative responses for neuronal survival and regeneration. Neuroprotective strategies aiming at reducing astrogliosis and enhance brain recovery are of potential interest for translational neuroscience research. In this special issue, we will discuss a variety of in vivo approaches include the development of novel central nervous system agents and ground-breaking strategies for genetically targeted antioxidant molecules, stem cell and micro RNA therapeutics. All of the treatments target astrocytes mechanisms or the mediators leading to brain damage in vivo and/or cytotoxicity in vitro. Mechanisms including apoptosis, necrosis, autophagy, inflammation and mediators like various excitatory amino acids, nitric oxide, inflammatory mediators, neurotransmitters, reactive oxygen species and withdrawal of trophic factors may lead to development of brain inflammation. Thus, this special series will focus on up-to-date research on the two-sword role of astrocytes targeting these pathways and mediators upon CNS damage.

Keywords:

Subtopics:
The subtopics to be covered within this issue are listed below:

1. Biochemical and physiological aspects of astrocytes.
2. Astrocytes response to acute and chronic inflammation
3. Pharmacological and genetic strategies targeting astrocytes functions for neuronal protection.

Schedule:

❖ Manuscript submission deadline: November 2015
❖ Peer Review Due: February 2016
❖ Revision Due: April 2016
❖ Announcement of acceptance by the Guest Editors: May 2016
Final manuscripts due: October 2016

Contacts:

Guest Editor: George E. Barreto, M.Sc., Ph.D.
Email: gesbarreto@gmail.com

George E. Barreto, M.Sc., Ph.D.
Molecular and Cellular Therapy
Head of Research Group
Department of Nutrition and Biochemistry
Faculty of Sciences
Pontificia Universidad Javeriana
Associate Editor, Frontiers in Aging Neuroscience
Editorial Board, Journal of Neurological Disorders & Epilepsy
Editorial Board, International Journal of Neurology Research
Editorial Board, Macrophage
Board, Food Science and Technology Letters
Bogotá, Colombia
Email: gsampaio@javeriana.edu.co
Phone: +57(1) 320-8320 Ext. 4096
Web page: https://sites.google.com/site/gesbarreto/