

Tentative Outline

Special Thematic Issue for the journal

Title of the Thematic Issue: ADVANCES IN PATHOPHYSIOLOGY AND PHARMACOLOGICAL APPROACHES IN BRAIN HYPOXIA-ISCHEMIA INSULT

Guest Editor: *Francisco Capani*

• **Scope of the Thematic Issue:**

Alterations in blood volume and oxygen concentrations are one of the main problems in worldwide health. Many of society's most devastating and costly neurological diseases and disorders are related to trauma at, or shortly after birth. In some cases, deficits are seen in childhood and in other, they are substantially delayed, arising later during the adolescence or young adulthood. In either case the initial insult initiates a metabolic and/or neurodegenerative cascade that proceeds, often undetected, for a considerable period before symptoms appear.

Animal models of Brain hypoxia are crucial for elucidating underlying mechanisms and for development of strategies of neuroprotection and/or remediation. Despite of the effort to develop novel therapeutic strategies mainly experimentally only hypothermia has shown some clinical benefit effects. Since so far, the scientific community don't have an established treatment for brain hypoxia-ischemia insult, investigations for novel therapeutic strategies for neuroprotection becomes imperative. In addition, the understanding of brain hypoxia- ischemia pathophysiology contributes to the search for neuroprotective agents. The primary insult, characterized by a severe energetic crisis, lactate accumulation and acidosis, is exacerbated during reoxygenation period, which is associated with free radicals accumulation, oxidative stress, cell damage and inflammatory cascades. This latent phase, where secondary injury can occur, offers a therapeutic window and constitutes the basis for pharmacological experimentation . Thus, the aim of this special issue is bringing together research addressing the role of neuroprotective agents and its physiopathology impact on the brain tissue.

The audience will mainly be experts in the field. This special issue will be very specific on its aims, focusing on pharmacological strategies for hypoxic-ischemic brain , their possible pathways and the use of pharmacological analogs. Translational aspects of this pharmacological approaches will be also considered.

Keywords: 6 to 8 keywords should be provided.

Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Physiopathological aspects of Brain Hypoxia-Ischemia
- Biochemical and Physiological aspects of pharmacological agents and its potential neuroprotective properties
- Beneficial effects of neuroprotective agents on , neuroplasticity, neurophysiology and behaviour
- . Clinical-related aspects of pharmacological agents on -associated damage and recovery following PA
- Silico Integrative Approach of neuroprotective agents

Tentative titles of the articles and list of contributors:

Tentative titles of the articles and list of contributors with their names, designations, addresses and email addresses should be provided.

-*Matthew Pamerter* , Department of Biology, University of Ottawa, Ottawa, Canada e-mail: mpamerter@uOttawa.ca

Title: Comparative and neonatal models of hypoxia-tolerance and these lessons can be translated to improve clinical outcomes of stroke

-Eduardo Blanco Calvo, Dept. Pedagogy and Psychology, University of Lleida, E-mail: eduardo.blanco@pip.udl.cat

Title: Neuropsychological and behavioral outcomes following childhood ischemic stroke: a review of the literature

-Berta Alcover-Sanchez, , Gonzalo Garcia-Martin, Francisco Wandosell, Beatriz Cubelos. Centro de Biología Molecular "Severo Ochoa" (CSIC-UAM) Univ. Autónoma Madrid, Cantoblanco, Madrid, Spain. E-mail: fwandosell@cbm.sic.es

Title: Altered myelin pathways after brain ischemia

-Marcos Avila, Nicolas Toro Urrego: Grupo Modelos Experimentales para las Ciencias Zoológicas - Departamento de Ciencias Clínicas- Facultad de Ciencias de la Salud, Universidad del Tolima- Ibagué, Tolima, Colombia. E-Mail: markos.avila@gmail.com

Title: "The role of iron chelators and hypoxia mimetic agents for Ischemic stroke and traumatic brain injury

-Maria Inés Herrera, Lucas Udovin, Tamara Kobiec, Francisco Capani, Instituto de Investigaciones Cardiológicas (ININCA) UBA CONICET E-Mail: franciscocapani@hotmail.com

Title "Palmitoylethanolamide attenuates developmental delay and early hippocampal damage induced by perinatal asphyxia in the immature rat brain".

-Karen Water, *The Children's Hospital en Westmead, School of Medicine, University of Sydney, Sydney Australia. Title: Intermittent hypercapnic Hypoxia during early development.* E-mail: karen.waters@sydney.edu.au

Schedule:

✧ Thematic issue submission deadline:
March 21st 2021

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