Oxidative Medicine and Cellular Longevity

Hindawi

Special Issue on

Parkinson's and Alzheimer's Diseases: From Oxidative Stress to Neuroprotection

CALL FOR PAPERS

The pathogenesis of ageing-related neurodegenerative diseases, such as Parkinson's (PD) and Alzheimer's (AD) diseases, is multifactorial with the existence of a "domino" cascade of neurotoxic events, which can be triggered at any point in the cascade. These series of events may act independently or cooperatively during the course of the disease, leading eventually to neuronal death. In this regard, a large amount of evidence suggests that common events, including metabolic and oxidative stress, mitochondrial dysfunction, defects in the ubiquitin-proteasome system, presence of abnormal aggregated proteins, changes in iron metabolism, neuroinflammation, and activation of death pathways, play a pivotal role in the neurodegeneration.

This has led to the current notion that neuroprotective drugs directed against a single target will be ineffective and that instead a single drug or combination of drugs with multifunctional properties may be more appropriate and may explain why the current neuroprotective therapies using single drugs offer only limited and transient benefits to patients, with no attenuation of neuronal loss under these conditions. In this context, drugs with the ability to counteract common neurodegenerative events, including oxidative stress and neuroinflammation, could play an important role in adjuvant neuroprotective therapies for PD and AD diseases.

We invite contributions of original research articles as well as review articles that improve our understanding of the cellular and molecular mechanisms involved in the common and specific pathogenic features of PD and AD diseases, which could contribute to the development of new pharmacological neuroprotective strategies. In this regard, we will also consider original research articles that provide insights into antioxidant and neuroprotective mechanisms of new and old drugs in *in vitro* and *in vivo* models as well as model organisms, including *Caenorhabditis elegans* and *Drosophila melanogaster*, of PD and AD diseases.

Potential topics include but are not limited to the following:

- Mechanisms of altered redox signaling and metabolic and oxidative stress in PD and AD diseases
- Redox mechanisms of neuronal dysfunction and death in PD and AD diseases
- Relationships between neuroinflammation and oxidative stress in PD and AD diseases
- Antioxidant, anti-inflammatory, and neuroprotective effects of natural and synthetic drugs
- Multifunctional neuroprotective natural and synthetic drugs with antioxidant properties for PD and AD diseases
- Neuroprotective strategies using different combinations of antioxidant natural or synthetic drugs

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/omcl/pad/.

Lead Guest Editor
Andrea Tarozzi, University of Bologna, Bologna, Italy
andrea.tarozzi@unibo.it

Guest Editors
Cláudio Viegas Jr., Federal University of Alfenas, Alfenas, Brazil
cvjviegas@gmail.com

Juan M. Zolezzi, Catholic University of Chile, Santiago, Chile
jzolezzi@bio.puc.cl

Silvia Maioli, Karolinska Institutet, Stockholm, Sweden
silvia.maioli@ki.se

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