



# Oxidative Medicine and Cellular Longevity

## Special Issue on **Modulation of Oxidative Stress: Pharmaceutical and Pharmacological Aspects**

# CALL FOR PAPERS

Reactive oxygen (ROS) and nitrogen (RNS) species are generated as by-products of normal cellular metabolic activities and have been implicated in the pathogenesis of a variety of diseases. Disruption of normal cellular homeostasis by redox signaling may result in chronic infections, inflammatory disorders, cardiovascular and neurodegenerative diseases, and cancer.

Notwithstanding that the multiple roles of oxidative stress in human normal biology and pathology have been intensely discussed over last half-a-century, the problem is still far beyond our full comprehension. Thus, in a comparatively short history of oxidative medicine, the roles free radicals and antioxidants have been entirely redefined. Some negative actions of free radicals and ROS in human biology and pathology, widely recognized two-three decades ago, have been subsequently transformed into positive ones, in the appreciation of their essential impact in the intracellular signaling on the organism's defense against biotic and abiotic stresses. On the other hand, the great hope that direct antioxidants could be the panacea resolving practically all health problems has vanished, due to the growing number of inconclusive or negative data from epidemiological and clinical studies.

The current state of uncertainty regarding feasibility of antioxidant therapy is partly due to methodological pitfalls in the drug development and delivery, the limited and often overlooked knowledge regarding the antioxidant metabolism and their interaction with physiologically important molecular/cellular processes in the organism, and the lack of correlations between biological markers of oxidative stress and clinical outcomes. Modulation of oxidative stress is important to develop new therapies to manage a variety of conditions for which current therapies are not effective.

The main aim of this special issue is to address different pharmaceutical and pharmacological aspects of research related to modulation of oxidative stress. In particular, contributions focused on the following issues will be particularly welcome.

Potential topics include, but are not limited to:

- ▶ Synthesis and derivatization of antioxidant compounds with potential pharmacological applications to modulate their antioxidant properties and bioavailability
- ▶ Mechanism of action of antioxidant compounds with special attention to the Nrf2/ARE signaling pathway
- ▶ Pharmacokinetics, metabolic pathways, and antioxidant activity of metabolites
- ▶ Optimization of delivery systems
- ▶ *In vitro* and *in vivo* studies on the pharmacological activity of antioxidants
- ▶ Epidemiological and clinical studies on the efficacy of antioxidant therapies
- ▶ Relevant biological markers to assess *in vivo* antioxidant/prooxidant action and its correlation with clinical efficacy

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

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### Manuscript Due

Friday, 14 August 2015

### First Round of Reviews

Friday, 6 November 2015

### Publication Date

Friday, 1 January 2016