Oxidative Medicine and Cellular Longevity

Hindawi

Special Issue on

Oxidative Stress in Immune System Function: Friends or Foes

CALL FOR PAPERS

The immune system is a host defence system with the ability to recognize a wide variety of host agents. Several different mechanisms are implicated in the identification and killing of microbes. Transient controlled changes in the redox state represent an important mechanism to start various biological processes in different immune cells. For example, the generation and release of ROS in the form of an "oxidative burst" represent the pivotal mechanism by which phagocytic cells are able to destroy pathogens. On the other hand, an imbalance between oxidising (ROS) and reducing agents (antioxidants) towards a prooxidant state leads to oxidative stress. Prolonged and persistent oxidative stress results in macromolecular damage through lipid peroxidation, protein carbonylation, and DNA oxidation. Different diseases, whose hallmark is the inability to repair oxidative stress induced DNA damage, are characterized by various degrees of immunodeficiency, suggesting that oxidative stress may play an important role in the regulation of the immune system. ROS also seem to play a role in the regulation of T-cell differentiation, proliferation, and activation. Impaired oxidative balance is also implicated in the pathogenesis of inflammatory complications, which may affect the function of many body systems.

Dissecting the role of the oxidative stress in the immune system may be useful to improve our understanding on how our immune system deals with infections and maintains the steady state. We invite Authors to contribute with original research articles as well as review articles that will illustrate and stimulate the continuing effort to understand the implication of oxidative stress in the function and dysfunction of the immuneresponse and to identify diagnostic/predictive biomarkers of oxidative stress or potential targets for the development of innovative therapeutic strategies.

Potential topics include but are not limited to the following:

- The effects of the oxidative stress induced DNA damage on the immune system
- Primary immunodeficiency with impaired DNA repair
- The role of the oxidative stress in the innate and acquired immunity
- NADPH Oxidase Deficiency: a multisystemic approach
- Impaired oxidative stress and inflammation
- The role of the enzymes implicated in the regulation of oxidant/antioxidant
- balance in immune system dysfunction and implications for the homeostasis of different body systems
- Micronutrient deficiency and oxidative status: the implications for the immune system
- Antioxidant therapy for the treatment of chronic inflammatory disease
- Efficacy of antioxidant therapy in immunomodulation and immunostimulation: fact or fashion

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

Lead Guest Editor
Giuliana Giardino, Federico II University, Naples, Italy
giuliana.giardino@unina.it

Guest Editors
Claudio Pignata, Federico II University, Naples, Italy
pignata@unina.it

Francesco Violi, Sapienza University of Rome, Rome, Italy
francesco.violi@uniroma1.it

Maria PiaCicalese, San Raffaele Scientific Institute, Milan, Italy
cicalese.mariapia@hsr.it

Ottavia Delmonte, Boston Children's Hospital, Boston, USA
ottavia.delmonte@childrens.harvard.edu

Manuscript Due
Friday, 14 July 2017

First Round of Reviews
Friday, 6 October 2017

Publication Date
Friday, 1 December 2017