Oxidative Medicine and Cellular Longevity

Hindawi

Special Issue on
DNA Damage: Health and Longevity

CALL FOR PAPERS

Damage in both mitochondrial and nuclear DNA can be generated by both endogenous and environmental factors and is involved in the ageing process. Oxidative stress leads to damage of important biomolecules and cells, with potential impact on the whole organism. Most reactive oxygen species (ROS) are generated in cells by the mitochondrial respiratory chain. Furthermore, ageing caused by the accumulation of molecular damage in DNA, proteins, and lipids is also characterized by an increase in intracellular oxidative stress due to the progressive decrease of the intracellular ROS scavenging. Oxidative stress has long been known to be involved in the pathophysiology of many human diseases including, but not restricted to, cancer. Oxidative stress-induced inflammation is a major contributor to several disease conditions, for example, sepsis, carcinogenesis, diabetic complications, and allergic asthma. Inflammatory cytokines can induce DNA damage and inhibit DNA repair, and persistent oxidative/nitrosative stress and excess lipid peroxidation are induced by inflammatory processes in a self-perpetuating process and cause progressive accumulation of DNA damage in target organs. Oxidative stress-induced epigenetic changes associated with malignant transformation have been reported and are important to be considered in pathophysiology of acute and chronic diseases.

The objective of this special issue is to address the relationship between ageing and genome instability, as well as the mechanisms involved in DNA damage. We encourage submissions related to fundamental cell features such as cell differentiation, DNA repair, epigenetic marking, cell cycle regulation, apoptosis, and biomarkers for monitoring exposed populations and studies about age-related disease.

Potential topics include but are not limited to the following:

- Oxidative damage
- Free radicals
- DNA damage detection techniques
- Cellular DNA damage response (DDR)
- Chromosome instability syndromes
- Telomere shortening
- Epigenetic modifications
- The role of microRNAs
- Antioxidants and DNA protectors
- DNA damage in human disease

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

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor
Sharbel W. Maluf, Universidade Federal de Santa Catarina, Florianópolis, Brazil
0808swm@gmail.com

Guest Editors
Wilner Martínez-López, Clemente Estable Biological Research Institute, Montevideo, Uruguay
wlopez@iibce.edu.uy

Juliana da Silva, Universidade Luterana do Brasil, Canoas, Brazil
juliana.silva@ulbra.br

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