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Oxidative Medicine and Cellular Longevity

Special Issue on

Metabolomics and Lipidomics in Oxidative Stress

CALL FOR PAPERS

Oxidative stress is defined as the imbalance between free radicals and cellular antioxidant systems. It causes alterations in numerous cellular pathways that accompany aging and that are associated with various pathological conditions, such as cancer, diabetes, cardiovascular disease, spinal cord injury, strokes, and cardiac arrest. These processes result in alterations in the content and/or the composition of metabolites as part of many cellular pathways. Metabolites are thus important indicators of physiological or pathological states in organisms. Therefore, identification of altered metabolites is important for diagnosing disease and understanding its progression and response to therapeutic intervention.

Over the last few decades, mass spectrometry, nuclear magnetic resonance spectroscopy, and other analytical techniques have dramatically advanced the search for biomarkers used to understand the role that oxidative stress plays in human disease. However, complex and interrelated cellular processes make it challenging to identify such biomarkers. In light of the challenge, we invite investigators to contribute their review articles and original research articles to enhance the ongoing efforts applying metabolomics and lipidomics in the study of oxidative stress. Articles focusing on *in vivo* or *in vitro* models of oxidative stress-related human diseases are also welcomed.

Potential topics include, but are not limited to:

- Oxidative modification of biomolecules
- Lipid peroxidation end-products
- Antioxidants
- Identification of biomarkers in ischemia, hypoxia, and other oxidative stress-related pathological conditions
- Method development in metabolomics and lipidomics
- Application of metabolomics and lipidomics in cell or animal models of human diseases that are related to broadly defined oxidative stress
- General aspects of potential targets and mechanisms of oxidative stress based on metabolomic and lipidomics approaches

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

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