

Special Issue on **Natural Products Targeting on Oxidative Stress and Inflammation: Mechanisms, Therapies, and Safety Assessment**

CALL FOR PAPERS

Many studies suggest that reactive oxygen species (ROS) is a mediator of inflammation. Indeed, overproduction of ROS and its association with the oxidative stress and inflammatory responses play a crucial role in the pathogenesis of various human chronic diseases including diabetes, cardiovascular diseases, obesity, cancer, infection diseases, and neurodegenerative diseases such as Parkinson's and Alzheimer's diseases. Enhanced ROS production and its consequent oxidative stress can cause oxidative damage of the cellular macromolecules including lipids, proteins, and DNA as well as the modulation of anti-inflammatory and antioxidative systems. Moreover, oxidative stress has been shown to induce the expression of numerous genes involved in inflammatory responses and cellular defense mechanisms including nuclear factor-kappa B (NF- κ B), nuclear factor-erythroid 2-related factor 2 (Nrf2), antioxidant responsive elements (ARE), and various anti-inflammatory and antioxidative genes.

Recent studies show that certain natural compounds and/or their derived small molecules may protect cells from oxidative stress as antioxidants, thus ameliorating various oxidative stress related diseases, such as diabetes, cardiovascular diseases, obesity, cancer, and neurodegenerative diseases, infection diseases, and various inflammation conditions. However, a large number of natural products yet remain underutilized and unexploited and their underlying mechanisms are unclear. Thus, understanding of precise mechanisms of actions of natural products would shed further light into the application of these compounds on prevention and treatment of oxidative stress related diseases.

In this special issue, we invite investigators to contribute recent original research articles both in experimental and in clinical data as well as review articles, which will better understand the precise effects of natural compounds in various disease models both in vitro and in vivo and further explore the cellular and molecular mechanisms underlying their actions.

Potential topics include but are not limited to the following:

- ▶ Human, animal, or in vitro studies in relation to oxidative stress and inflammation: extraction, purification of natural compounds from functional foods, medicinal plants, and herbs and their application on oxidative stress related diseases
- ▶ Molecular mechanisms of antioxidative and anti-inflammatory effects of natural compounds in diabetes, cardiovascular diseases, obesity, cancer, and neurodegenerative diseases, infection diseases, and various inflammation conditions: ROS-mediated signaling and redox modulation
- ▶ Molecular mechanisms of antioxidative and anti-inflammatory effects of natural compounds against ROS-induced oxidative damage and toxicity
- ▶ Isolation, chemical characterization, and pharmacological evaluation of novel natural compounds from functional foods, medicinal plants, and herbs in relation to oxidative stress and inflammation
- ▶ Approaches and the safety assessment of natural ingredients and extracts

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

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