

Special Issue on
**New Trends in Antioxidant Compounds: A Precise
Nutraceutical in Cardiometabolic Disorders**

CALL FOR PAPERS

Most medical treatments are designed for the “average patient” as a “one-size-fits-all approach,” which may be successful for some patients but not for others. Precision medicine is an innovative approach to tailoring disease prevention and treatment that takes into account differences in people’s genes, environments, and lifestyles. The goal of precision medicine is to target the right treatments to the right patients at the right time. Cardiometabolic disorders are considered one of the leading cause of morbidity and mortality in the west world. The most cost-effective preventive approach still remains a personalized diet and physical activity. However, lifestyle programs are often difficult to follow for long periods of time and changes in dietary habits and physical activity sometimes are not enough to reduce risk parameters. Research on food bioactives represents an emerging strategy to evaluate the role of functional foods and supplements in health and disease prevention.

Several bioactive compounds and nutrients in foods have physiological properties that are beneficial for human health. While nutrients typically have clear definitions with established levels of recommended intakes, bioactive compounds often lack such a definition. Although a food-based approach is often the optimal approach to ensure adequate intake of bioactives and nutrients, these components are also often produced as dietary supplements. There is well-established evidence of the pharmacological properties of micronutrients that render them therapeutically effective in chronic inflammatory diseases. Although caution should be exercised in using antioxidant supplementation, antioxidant foods as dietary components play an important role in the management of cardiometabolic disorders. There is documented evidence of disease-modifying effects of nutritional compounds with anti-inflammatory and antioxidant effects. They have specific applications in ameliorating oxidative stress-induced inflammatory diseases such as Diabetes Mellitus and cardiovascular diseases. However, many of these supplements are not sufficiently studied and have an unclear role in chronic disease prevention. Observational studies have suggested that foods such as fruits and vegetables, nuts, chocolate, and fatty fish, as well as beverages such as tea, wine, and coffee, are associated with a wide range of health benefits. As a result, many have postulated that various bioactives and/or nutrients in these foods may be responsible for the observed health-related effects. Yet annual sales of dietary supplements continue to rise in the USA, Europe, and Asia. This may be explained in part by the perception that supplements containing bioactives and nutrients help ensure an adequate intake not only to prevent deficiency of essential vitamins and minerals but also to potentially reduce the risk of major chronic diseases.

In this special issue, we invite investigators to contribute original research articles reporting data from both experimental and clinical studies, as well as review articles, which provide a better understanding of the effects of dietary supplements, nutraceuticals, phytochemicals, and functional foods on cardiometabolic disorders linked to oxidative stress and inflammation. Since in the last years there has been great social and environmental interest for the efficient reuse of agriculture waste co- and by-products, often rich in bioactive compounds, to improve the ecosustainability of cultivations by reducing waste disposal, papers related to the identification and recovery of such compounds are also encouraged.

Potential topics include but are not limited to the following:

- ▶ Evaluation in vitro and in vivo (including studies in human) of the safety and the cellular and molecular mechanisms underlying the actions of natural compounds on cardiometabolic disorders
- ▶ High-performance analytical methods suitable for extraction and purification of the natural compounds from functional foods, dietary supplements, and herbs, for their stability and the study of the bioavailability in vitro and/or in vivo in biological fluids
- ▶ Bioanalytical methods to determine the biological and toxicological effects of these substances and their effect on the management of cardiometabolic disorders
- ▶ Study of physicochemical properties of the of compounds to develop new formulations that help in ameliorating oxidative stress-induced inflammatory diseases such as Diabetes Mellitus and cardiovascular diseases

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

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

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