Special Issue

Plant-Derived Molecules in Prevention of Metabolic and Oxidative Stress-Related Diseases

Message from the Guest Editor

Metabolic and oxidative stress-related diseases are global public health. Plant-derived molecules, such as polyphenols, alkaloids, and terpenoids, have garnered significant attention due to their potential therapeutic effects and safety profiles. These bioactive compounds exhibit diverse mechanisms targeting key metabolic dysfunction and oxidative stress pathways. Plant-derived antioxidants can scavenge free radicals and upregulate endogenous defence systems. Compound polyphenols can activate key antioxidant enzymes, including superoxide dismutase and catalase, protecting cells from oxidative damage. These molecules also mitigate mitochondrial dysfunction, a major contributor to oxidative stress in metabolic diseases. Emerging research highlights the role of these compounds in modulating gut microbiota, contributing to improved metabolic outcomes. In silico and molecular docking studies have further elucidated their interactions with specific proteins, offering insights into their mechanisms of action. Special Issue aims to explore the latest advancements in plant-derived molecules and their role in preventing and managing metabolic and oxidative stress-related diseases.

Guest Editor

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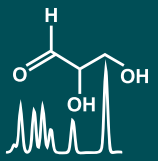

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Message from the Editor-in-Chief

The metabolome is the result of the combined effects of genetic and environmental influences on metabolic processes. Metabolomic studies can provide a global view of metabolism and thereby improve our understanding of the underlying biology. Advances in metabolomic technologies have shown utility for elucidating mechanisms which underlie fundamental biological processes including disease pathology. *Metabolites* is proud to be part of the development of metabolomics and we look forward to working with many of you to publish high quality metabolomic studies.

Editor-in-Chief

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