Special Issue

Phytochemical Alterations Induced by Food Processing and Food Supplement Processing

Message from the Guest Editors

Food processing techniques often lead to chemical modifications in foods and nutraceuticals, impacting their nutritional and sensory characteristics. Reactions such as Maillard, hydrolysis, oxidation, and enzymatic processes can enhance or degrade food quality, sometimes producing harmful compounds that compromise safety. Innovative methods like high hydrostatic pressure and ultrasound also influence bioactive phytochemicals. Understanding these chemical and phytochemical transformations is crucial for improving food products and supplements. Advanced analytical techniques such as HPLC-MS, GC-MS, NMR, and FTIR enhance sensitivity and precision in analyzing phytochemical changes, contributing to a deeper understanding of food quality, safety, and nutrition. A key challenge lies in elucidating the mechanisms behind the formation and degradation of bioactive compounds, particularly regarding thermal and non-thermal technologies. This Special Issue aims to explore advanced analytical tools for characterizing phytochemical alterations during food processing stages, inviting review articles on this topic.

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