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Special Issue Reprint

Phytochemicals

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This Reprint, entitled “Phytochemicals: Extraction, Optimization, Identification, Biological Activities, and Applications in the Food, Nutraceutical, and Pharmaceutical Industries,” comprises original research articles and critical reviews on increasing the value of compounds derived from plants. Interest in natural plant extracts has grown in areas related to food and beverage formulation, food technology enhancement, and their potential use in the prevention and management of a variety of diseases. The salutary attributes conferred by diets rich in fruits, vegetables, and whole grains result not only from fiber, vitamins, and minerals, but also from a myriad of phytochemicals. Among those, phenolic compounds represent major classes of plant secondary metabolites with biological antioxidant, antiviral, anticancer, and anti-inflammatory activities. These make phenolics of special relevance to the prevention of diseases, health maintenance, and the development of functional ingredients in nutraceutical, food, and pharmaceutical industries. This Reprint compiles recent advances in phytochemical chemistry, extraction techniques, analytical methods, and biological activity characterization. It also emphasizes studies that interpret molecular mechanisms of action using established and advanced bioanalytical approaches. Researchers have contributed both original investigations and comprehensive reviews, offering updated insights into the role of phytochemicals in health and industry applications.

