

Special Issue

Innovative Strategies for Phytochemical Extraction, Characterization, and Bioactivity Evaluation

Message from the Guest Editors

Innovative strategies for phytochemical extraction, characterization, and biological evaluation have become essential tools for unlocking and harnessing the therapeutic potential of natural products. Recent advances in extraction technologies, including supercritical fluid extraction, pressurized liquid extraction, ultrasound-, microwave-, and enzyme-assisted extraction, deep eutectic solvent-based extraction, and hybrid approaches, have significantly enhanced both yield and selectivity while enabling the extraction of unstable phytochemicals. Spectroscopic and hyphenated techniques, high-resolution mass spectrometry, and multidimensional chromatography have facilitated in-depth characterization of complex plant-derived products. Integrating modern bioassays, including 3D cell-based assays, omics- and biosensor-based technologies, with in silico approaches has provided comprehensive insights into the biological activities and mechanisms of action of plant-derived products. This Special Issue aims to highlight recent advances in phytochemical research, with a focus on innovative approaches in extraction, characterization, and bioactivity evaluation.

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Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

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