

Special Issue

Chemical Analysis and Biological Activities of Plant Essential Oils

Message from the Guest Editors

Chemical characterization strategies for essential oils from plants, and their analysis through several in vitro or in vivo biological assays represent a burgeoning field with wide-ranging implications across various sectors. Essential oils, composed of a myriad of volatile compounds derived mainly from mixtures of terpenes (mono- and sesquiterpenes essentially), offer diverse biological activities that make them valuable in numerous applications. In nature, essential oils serve a crucial function in plant protection, although their precise mechanisms of action remain elusive. It is also well known that their chemical composition can exhibit significant variation, even within the same plant species or among different plants. This variation stems from factors such as genetic diversity, geographical location, environmental conditions, nutritional status, the specific plant parts used (such as stems, leaves or flowers) and the extraction methods employed. From antimicrobial and antioxidant properties to their potential in pharmaceuticals, cosmetics and agriculture, essential oils hold promises for innovative solutions.

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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, and 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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