

Editorial

Special Issue on “Extraction and Purification of Bioactive Compounds”

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Bioactive compounds, which are abundant in flora, fauna, and microorganisms, can potentially be used by various industries, including pharmaceuticals, functional foods, dietary supplements, and cosmetics. Their extraction and purification, however, pose significant challenges due to the presence of impurities, interference from other compounds, and the need to maintain their stability and activity. This Special Issue, “Extraction and Purification of Bioactive Compounds” (https://www.mdpi.com/journal/processes/special_issues/extraction_bioactive accessed on 4 July 2023), delves into the complexities of these processes, presenting one review paper and eleven original research articles that explore the enrichment, identification, and various aspects of bioactive compounds.

The issue begins with the extraction of bioactive compounds from living organisms. Corrêa et al. [1] provide a comprehensive review of the current methodologies used for obtaining bioactive products from microalgae, discussing technologies used for cell disruption, selective extraction, recovery, and purification. Ghafoor et al. [2] compare conventional and green extraction techniques for natural antioxidants from Saudi date fruit, optimizing the supercritical extraction process using a response surface methodology and regression analysis techniques. A team from Serbia [3] explores the carotenoid extraction protocol using yeast fermentation technology, testing various methods for cell lysis, extraction, and solvents.

Additionally, the utilization of resins for the adsorption of bioactive compounds is addressed. Wu et al. [4] discuss the ion exchange strategy with Dowex[®] HCR-S resin for the isolation and purification of ectoine, a high-value bioactive compound, from a fermentation broth. Zain et al. [5] examine three macroporous resins for the enrichment of four bioactive compounds from an acid-hydrolyzed oil palm leaves extract, selecting the best-performing resin based on its sorption capacities.

The identification of bioactive compounds is another key focus of this issue. Chu et al. [6] extract phenolic compounds from ten common commercial mushroom species, identifying different phenolic compounds using LC-ESI-QTOF-MS/MS. Cao et al. [7] analyze the constituents of acidic compounds in the particulate and gaseous phases of mainstream cigarette smoke. Other researchers investigate the composition of bioactive compounds in organically produced cereals [8], dried sea cucumber viscera [9], and the medicinal plant, *Clinacanthus nutans* [10].

The issue concludes with an overview of the other aspects of bioactive compounds. Ramakrishnan et al. [11] optimize the operation parameters of enzymatic transesterification for biodiesel production from salmon oil. Xu et al. [12] measure the solubility of the high-value biocompound, 2,5-furandicarboxylic acid (FDCA), and its synthetic intermediate in binary solvent mixtures of water and 1,4-dioxane.

This Special Issue comprehensively explores the extraction and purification of bioactive compounds, shedding light on the complexities of these processes and the potential



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these compounds hold for various industries. We hope that the insights will inspire future research and innovation in this exciting field.

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