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Application of Chromatography and Mass Spectrometry in Food Safety Monitoring

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Message from the Guest Editors

Chromatography is a cornerstone analytical technique in food monitoring, critical in ensuring food safety, quality, and regulatory compliance. It is widely used to detect, identify, and quantify various substances, including contaminants, residues, and additives in food products.

Mass spectrometry (MS) enhances analytical capabilities by providing precise molecular weight data and structural information. Gas chromatography (GC) coupled with MS allows for separating and quantifying multiple contaminant residues in food. Liquid chromatography (LC) is equally valuable, especially for compounds that are not volatile or thermally stable, such as mycotoxins and antibiotics.

Chromatographic techniques can identify the presence of unauthorized substances (food fraud and adulteration) or the dilution of high-value ingredients, such as olive oil or honey, with cheaper alternatives.

Overall, the application of chromatography in food monitoring is essential for maintaining food safety, upholding regulatory standards, and ensuring consumer protection, thus allowing for the precise and reliable analysis of complex matrices and supporting the integrity of the global food supply chain.



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Special Issue



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