Foodomics: Advanced Mass Spectrometry in Modern Food Science and Nutrition
Alejandro Cifuentes (Editor)

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DESCRIPTION

Provides the latest "-omics" tools to advance the study of food and nutrition

The rapidly emerging field of foodomics examines food and nutrition by applying advanced "-omics" technologies in order to improve people's health, well-being, and knowledge. Using tools from genomics, transcriptomics, epigenomics, proteomics, and metabolomics, foodomics offers researchers new analytical approaches to solve a myriad of current challenges in food and nutrition science.

This book presents the fundamentals of foodomics, exploring the use of advanced mass spectrometry techniques in food science and nutrition in the post-genomic era. The first chapter of the book offers an overview of foodomics principles and applications. Next, the book covers:

- Modern instruments and methods of proteomics, including the study and characterization of food quality, antioxidant food supplements, and food allergens
- Advanced mass spectrometry-based methods to study transgenic foods and the microbial metabolome
- Mass spectrometry-based metabolomics in nutrition and health research
- Foodomics' impact on our current understanding of micronutrients (phenolic compounds and folates), optimal nutrition, and personalized nutrition and diet related diseases
• Principles and practices of lipidomics and green foodomics

• Use of chemometrics in mass spectrometry and foodomics

The final chapter of *Foodomics* explores the potential of systems biology approaches in food and nutrition research. All the chapters conclude with references to the primary literature, enabling readers to explore individual topics in greater depth.

With contributions from a team of leading pioneers in foodomics, this book enables students and professionals in food science and nutrition to take advantage of the latest tools to advance their research and open up new areas of food and nutrition investigation.

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### ABOUT THE AUTHOR

**ALEJANDRO CIFUENTES, PhD**, is Full Research Professor at the National Research Council (CSIC) in Madrid, Spain. He has authored more than 200 SCI papers and is Editor of two journals: *TrAC Trends in Analytical Chemistry* and *Electrophoresis*. Dr. Cifuentes was the first to define the new discipline of foodomics in an SCI journal. His research centers on the development of advanced analytical methods for foodomics, food quality and safety, as well as the isolation and identification of biologically active natural products.

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### SERIES

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