

Table of contents

List of Contributors ix

Foreword xvii

Preface xix

Volume 1

Section I: Recent Analytical Technology for Food Pathogens and Toxins 1

1 Omic Analysis of Protein and Peptide Toxins in Food 3

Pasquale Ferranti, Chiara Nitride, and Monica Gallo

2 Biotechnology-Based Sensing Platforms for Detecting Foodborne Pathogens 37

Akbar S. Khan

3 Review of Sample Treatments and the State-of-the-art of Analytical Techniques for Mycotoxins in Food 51

Natalia Arroyo-Manzanares, José F. Huertas-Pérez, Ana M. García-Campaña, and Laura Gámiz-Gracia

4 Isothermal Nucleic Acid Amplification for Food Toxicity Analyses 103

Luis A. Tortajada-Genaro, S. Santiago-Felipe, and Angel Maquieira

Section II: Microbial and Plant Toxins 137

5 Determination of Mycotoxins in Food 139

Muhammad Azhar Hayat Nawaz, Sajid Rauf, Akhtar Hayat, Gaelle Catanante, Rizwan Raza, and Jean-Louis Marty

6 Mycotoxins Detection in Asia 169

Chee Wei Lim, Angela Li, and Joanne Sheot Harn Chan

7 Surface Plasmon Resonance Analysis of Food Toxins and Toxicants 195

Valerija Vežočník, Vesna Hodnik, and Gregor Anderluh

8 Food Poisoning Case Studies: Mushroom and Pufferfish Toxin Investigation 217

Samuel Tsz-chun Cheung, Winnie Wing-yan Chum, Wai-yan Ha, Pui-kwan Chan, and Tin-yau Law

9 The Analysis of Pyrrolizidine Alkaloids in Honey 237

Colin Crews and Till Beuerle

10 Pyrrolizidine Alkaloids in Food: Analytical, Toxicological and Health Considerations 267
Caroline T. Griffin, Aisling Sheehan, Martin Danaher, and Ambrose Furey

Volume 2

Section III: Marine Toxins 319

11 The Determination of Marine Biotoxins in Seafood 321
Arjen Gerssen and Mirjam D. Klijnstra

12 Detection of Paralytic Shellfish Poisoning Toxins in Molluscs 363
Stephen Burrell and Andrew D. Turner

13 Determination of Saxitoxin and Tetrodotoxin in Fish 403
Sara C. McGrath and Jonathan R. Deeds

14 Determination of Saxitoxin, Tetrodotoxin and Common Phycotoxins 431
Luis M. Botana, Amparo Alfonso, Mercedes R. Vieytes, M. Carmen Louzao, Ana M. Botana, Carmen Vale, and Natalia Vilariño

15 Ciguatoxin Detection Methods and High-Throughput Assays 469
Marco Inserra, Yelena Lavrukina, Alun Jones, Richard J. Lewis, and Irina Vetter

Section IV: Biogenic Amines and Common Food Toxicants 489

16 Detection of Histamine Based on Biosensor System 491
Takeshi Ito

17 Flow-based Technology for Analysis of Food Pesticides 505
Antonio Ruiz-Medina, Eulogio J. Llorent-Martínez, María Luisa Fernández-de Córdova, and Pilar Ortega-Barrales

18 Residual Pesticides and Heavy Metals Analysis in Food 537
Sameeh A. Mansour

19 Microarray Methodologies for Pesticides and Other Toxins in Foods 571
Xiaofeng Hu, Suiyan Ouyang, Peiwu Li, Qi Zhang, Xianfeng Ren, Huali Xie, and Zhaowei Zhang

Section V: Quality Assurance and Regulatory Development 593

20 Accreditation, a Key Recognition for the Analysis of Food Toxins and Contaminants 595
Wang-wah Wong

21 Quality Assurance and Control for Accurate Measurement of Food Toxins 621
Alan Richards

22 Analytical Methods and Development of Reference Materials for Toxic Metals and Metal Species in Food and Dietary Supplements 639

Stephen E. Long, Michael Ellisor, Frances Nilsen, Laura Wood, Karen Murphy, and Lee Yu

23 Overview of Toxins and Toxicants in Food and Their Regulatory Limits 679

Peter A. Brown

24 Food Allergy: Managing Food Allergens 711

Michael J. Walker and M. Hazel Gowland

Index 743