# Table of Contents

## Preface ................................................................................................................................. xv

## Section 1  
**Nanomedicine**

### Chapter 1  
**Personalized Approach in Nanomedicine: Understanding Adverse Effects and Their Risk Assessment** .................................................. 1  
Maria Vlasova, University of Eastern Finland, Finland  
Boris V. Smirin, University of Eastern Finland, Finland

## Section 2  
**Pharmacogenetics**

### Chapter 2  
**Drug Delivery Strategies for Tolerogenic Therapy for Autoimmune Diseases in an Antigen-Specific Manner** ............................................. 23  
Kevin J. Peine, The University of North Carolina at Chapel Hill, USA  
Naihan Chen, The University of North Carolina at Chapel Hill, USA  
Eric M. Bachelder, The University of North Carolina at Chapel Hill, USA  
Kristy M. Ainslie, The University of North Carolina at Chapel Hill, USA

### Chapter 3  
**Cancer Drug Delivery: Pharmacogenetics, Biomarkers, and Targeted Therapies** ........................................................................... 52  
Jai N. Patel, Levine Cancer Institute, USA  
Jeryl Villadolid, Levine Cancer Institute, USA

## Section 3  
**Proteomics and Genomics**

### Chapter 4  
**Genomics and Proteomic Approach in the Treatment of Various Human Diseases: Applications of Genomics and Proteomics** ................. 97  
Urmila Jarouliya, Jiwaji University, India  
Raj K. Keservani, Rajiv Gandhi Proudyogiki Vishwavidyalaya, India
Section 4
Bioinformatics

Chapter 5
Bioinformatics and Its Therapeutic Applications ................................................................. 125
Sarvesh Kumar Gupta, IIIT Allahabad, India
Kamal Kumar Chaudhary, IIIT Allahabad, India
Nidhi Mishra, IIIT Allahabad, India

Section 5
Nutraceuticals and Phytopharmaceuticals

Chapter 6
An Overview and Therapeutic Applications of Nutraceutical and Functional Foods ............. 160
Raj K. Keservani, Rajiv Gandhi Proudyogiki Vishwavidyalaya, India
Anil K. Sharma, Delhi Institute of Pharmaceutical Sciences and Research, India
Rajesh K. Kesharwani, National Institute of Technology Warangal, India

Chapter 7
Phytopharmaceuticals and Its Applications in Therapy.......................................................... 202
Alejandra Hernández-Ceruelos, Cuerpo Académico de Salud Pública, Área Académica de Medicina, Universidad Autónoma del Estado de Hidalgo, Mexico
Sergio Muñoz-Juarez, Cuerpo Académico de Salud Pública, Área Académica de Medicina, Universidad Autónoma del Estado de Hidalgo, Mexico
Patricia Vázquez-Alvarado, Cuerpo Académico de Salud Pública, Área Académica de Odontología, Universidad Autónoma del Estado de Hidalgo, Mexico

Chapter 8
A Perspective on the Phytopharmaceuticals Responsible for the Therapeutic Applications.......... 229
Rajesh K. Joshi, Regional Medical Research Centre (Indian Council of Medical Research), India

Chapter 9
Phytopharmaocuticals Applications of Nutraceutical and Functional Foods.......................... 263
Dhan Prakash, Amity University, India
Charu Gupta, Amity University, India

Section 6
Cosmeceuticals

Chapter 10
Cosmeceuticals: Safety, Efficacy and Potential Benefits ...................................................... 287
Long Chiau Ming, University of Tasmania, Australia
Wei Chern Ang, University of Bath, UK
Quan Yang, University of Bath, UK
Premrata Thitilertdecha, Mahidol University, Thailand
Tin Wai Wong, Universiti Teknologi MARA, Malaysia
Tahir Mehmood Khan, Monash University Malaysia, Malaysia
Chapter 11
Cosmeceuticals: Camel and Other Milk – Natural Skin Maintenance .................................................. 309
Reuven Yagil, Ben-Gurion University, Israel & Beauty Treat Organic Cosmetics Ltd., Israel

Section 7
Red Blood Cells

Chapter 12
Resealed Erythrocytes as Drug Carriers and Its Therapeutic Applications............................................ 340
Prabhakar Singh, University of Allahabad, India
Sudhakar Singh, Kolkata Medical College, India
Rajesh Kumar Kesharwani, NIMS University, India

Section 8
Herbals

Chapter 13
New Herbal Approaches for the Treatment of Diabetic Kidney Diseases and Its Therapeutic
Implications.................................................................................................................................................. 368
Durgavati Yadav, Institute of Medical Sciences, India
Vivek Pandey, Institute of Medical Science, India
Shivani Srivastava, Institute of Medical Sciences, India
Yamini Bhusan Tripathi, Institute of Medical Science, India

Compilation of References .......................................................................................................................... 407

About the Contributors.................................................................................................................................. 503

Index.............................................................................................................................................................. 507