

Biotechnology in functional foods and nutraceuticals, edited by Debasis Bagchi, Francis C. Lau, Dilip K. Ghosh (2010). Boca Raton, FL: CRC press, Taylors & Francis Group. 591 pp. (Hardback). ISBN 978-1-4200-8711-6

Our understandings of the relationships between food, physiological function, and disease have progressed well in recent years. Nutrients and other biologically active substances in herbals, for instance, are major constituents of functional foods, nutraceuticals, and dietary supplements that make them instrumental in maintaining health, act against various disease conditions, and thus promote the quality of life. The explosive growth, research developments, lack of standards, marketing zeal, quality assurance, and regulation play a vital role in its future success.

This multi-authored book written by experts with vast experience in these areas covers the biotechnology in functional foods, nutraceuticals, and health claims. The book is well organized, explores new sources of nutraceutical and functional food ingredients, and addresses crucial issues for product development, processing, and post-launch monitoring. It presents the latest developments in the chemistry, biochemistry, pharmacology, epidemiology, engineering, and processing of functional foods.

The book provides recent information and up-to-date evaluations of various bioactive compounds, presenting information on the distribution of these components in different sources and their properties in processing, and provides the essential information for the food industry to develop successful new products. Each chapter presents an in-depth review of a major functional food component providing: chemical, physical properties, and molecular structure – derivatives and possible isomers; distribution in biological material; nutritional, physiological, and clinical functionality – including safety, bioactivity, bioavailability; efficacy in human diet and health; pharmacological properties; separation technology – in the laboratory and commercial production; processing – chemical, physical, and engineering properties during

processing, process system, processing equipment, quality control in production, shelf-life at various storage conditions; and identification techniques.

This book has 6 parts and 30 chapters dealing with almost all relevant issues in this area. The first part of the book contains helpful information in the area of biotechnology for the enhancement of functional foods and nutraceuticals. Part 2 deals with the impact of genetic modification of functional foods from bacteria, transgenic pulse crops, and the application and potential deals with animal biotechnology. Part 3 deals with new frontier in food manufacturing process from different sources such as microalgae, bacteria, fruits, and even the use of nanotechnology in this area. Part 4 describes the quality assurance and safety. Parts 5 and 6 describe the legal, social, and regulatory aspects of food biotechnology and its future prospects.

The authors have well considered the fact that development of a functional food and the deposition of a health claim dossier results in bigger investments than those needed to put a normal food on the market. The description of the procedures and practical guidelines for functional food product development are well laid out in the book, which arrives at an important moment in the functional food health claim regulation discussion.

This up-to-date resource is a must-have for research professionals – both basic and applied – as well as marketers in the worldwide functional foods/nutritional supplements industry. With contributions from a panel of leading international experts, this book provides instant access to comprehensive, cutting edge data making it possible for food scientists, nutritionists, and researchers to utilize this ever growing wealth of information.

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