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Gut-brain Connection, Myth Or Reality?: Role Of The Microbiome In Health And Diseases - Adrien A Eshraghi 2021-11-03

In this book the recent advancements in understanding the gut-brain interaction as well as gut microbiome and how this interaction plays a vital role in human health and disease are discussed. Each chapter gives an analysis of questions, research directions, and methods within the field of gut-brain axis. The readers will benefit from the latest knowledge about our understanding about how gut-brain axis and modulation of gut microbiome determines predisposition to neurological disorders. The multidisciplinary book is essential reading for anyone interested in the field of gut-brain axis and gut microbiome: from undergraduates to graduate students as well as scientists and physicians having an interest in the new exciting field of gut microbiome and its relationship with brain function.

Fish Nutrition - Ronald W. Hardy 2021-10-19

Fish Nutrition, Fourth Edition is an up-to-date, authoritative presentation of all key elements of the nutrition of fish and crustaceans. As aquaculture is rapidly expanding, more than 200 herbivorous and carnivorous species occupy a diverse range of ecological niches, and have therefore evolved to utilize a wide array of food sources. This new edition highlights these differences and covers the complexity and challenges associated with fish nutrition, addressing nutrient requirements to produce high-quality, healthful and sustainable resources, the essential nutrients for fish species, including proteins and amino acids, vitamins, minerals and essential fatty acids, a feed quality assessment, and fish pathology. Led by a team of international experts, this edition provides readers with new information on the use of high-throughput technologies in fish nutrition research, the role of feeds on the community structure of the microbiome, and advances in essential nutrient requirements. Features expansive updates to the previous edition, including a new chapter dedicated to diet analysis and evaluation Addresses the roles of fish nutrition and feeds on sustainability and the environmental impacts of aquaculture Covers basic nutritional biochemistry and applied nutritional topics

Textbook of Pediatric Gastroenterology, Hepatology and Nutrition - Stefano Guandalini 2021-12-26

The latest edition of this textbook provides a comprehensive, state-of-the-art overview of the major issues specific to the field of pediatric gastroenterology, hepatology, and nutrition. The textbook begins with a section on gastroenterology and nutrition that presents the overall scope of issues encountered in children suffering from disorders of the gastrointestinal tract, pancreas, and/or presenting nutritional issues, as well as current and future prospects on the use of prebiotics, probiotics, and postbiotics. The second section is centered around hepatology, reviewing congenital and acquired disorders of the biliary tract and liver, as well as analyzing available diagnostic and therapeutic procedures and future perspectives. Written by experts in the field, *Textbook of Pediatric Gastroenterology, Hepatology and Nutrition: A Comprehensive Guide, Second Edition* is an indispensable resource for students, trainees, and clinicians, sure to distinguish itself as the definitive reference on this topic.

Lactic Acid Bacteria - Marcela Albuquerque Cavalcanti de Albuquerque 2020-02-26

Lactic acid bacteria (LAB) are a diverse group of bacteria that comprise low GC content Gram-positive cocci or rods that produces lactic acid as the major end product of the fermentation process. Bifidobacterium genera may also be considered as a part of the LAB group for possessing some similar phenotypical characteristics despite the higher GC content. The key feature of LAB metabolism is efficient carbohydrate fermentation. This contributes to the production of several microbial metabolites that result in the improvement of flavor and texture of fermented foods, in addition to its positive impact on the human health when LAB is administered as a probiotic. The book deals with advances

made in the functionalities of LAB, such as their effect on vitamin D receptor expression, impact on neurodegenerative pathologies, production of B-vitamins for food bio-enrichment, production of bacteriocins to improve gut microbiota dysbiosis, production of metabolites from polyphenols and their effects on human health, effect on reducing the immunoreaction of food allergens, as biological system using time-temperature to improve food safety, and the use of probiotics in animal feed. The book also reviews the use of LAB and probiotic technologies to develop new functional foods and functional pharmaceuticals.

Probiotic Research in Therapeutics - Parneet Kaur Deol 2020-11-13

The volume sheds new light on role of gut dysbiosis in cancer and immunological diseases and their clinical manifestations. Contributions in the volume discuss about the gut microbiota as a therapeutic target and the role of probiotics in its management. The volume explores application of probiotics in the treatment of various cancers viz. colorectal, gastric, lung, and breast cancer and immunological diseases. The volume comprises of chapters from expert contributors organized into various important themes which include, introduction, relationship between gut microbiota and disease condition, mechanisms involved, clinical and in vivo status, conclusion and future directions. This is a highly informative and carefully presented book, providing recent and innovative insight for scholars and researchers with an interest in probiotics and its applications in cancer and immunological diseases.

Preparation of Phytopharmaceuticals for the Management of Disorders - Chukwuebuka Egbuna 2020-11-03

Preparation of Phytopharmaceuticals for the Management of Disorders: The Development of Nutraceuticals and Traditional Medicine presents comprehensive coverage and recent advances surrounding phytopharmaceuticals, nutraceuticals and traditional and alternative systems of medicines. Sections cover the concepts of phytopharmaceuticals, their history, and current highlights in phytomedicine. Also included are classifications of crude drugs, herbal remedies and toxicity, traditional and alternative systems of medicine, nanotechnology applications, and herbal cosmeticology. Final sections cover applications of microbiology and biotechnology in drug discovery. This book provides key information for everyone interested in drug discovery, including medicinal chemists, nutritionists, biochemists, toxicologists, drug developers and health care professionals. Students, professors and researchers working in the area of pharmaceutical sciences and beyond will also find the book useful. Includes the history and current highlights in phytomedicine, along with classifications of crude drugs, herbal drug technologies and herbal cosmeticology Provides detailed information on herbal remedies and toxicity, traditional and alternative systems of medicine, and applications of microbiology and biotechnology in drug discovery Discusses the nutritional and health benefits of nutraceuticals and how they help in the management and treatment of metabolic diseases

Probiotics and Prebiotics in Foods - Adriano Gomes da Cruz 2021-03-23

Probiotic and Prebiotics in Foods: Challenges, Innovations, and Advances reviews recent advances, innovations, and challenges in probiotics/prebiotics in food and beverages. The book presents up-to-date, novel and extensive information regarding recent research and applications in probiotics and prebiotics in food. Sections address probiotics, prebiotics, paraprobiotics and postbiotics, probiotics, prebiotics and bucal health, probiotics, prebiotics and obesity, probiotics, prebiotics and sleep quality, in vitro and in vivo assays for selection of probiotics, probiotics and mycotoxins, edible films added to probiotic and prebiotics, predictive microbiology applied to development of probiotic foods, non-bovine milk products as probiotic and prebiotic foods, emerging technologies, and much more. Written for food scientists, nutritionists, health professionals, food product developers, microbiologists, those working in food safety, and graduate students and

researchers working in academia, this book is a welcomed resource on the topics discussed. Includes coverage of both dairy and non-dairy probiotics, prebiotics and symbiotic food products Discusses the efficacy of food substrate in probiotic and prebiotic delivery Presents predictive microbiology models

Probiotics and Prebiotics in Food, Nutrition and Health - Semih Otles 2013-12-09

Presenting the work of international experts who discuss all aspects of probiotics and prebiotics, this volume reviews current scientific understanding and research being conducted in this area. The book examines the sources and production of probiotics and prebiotics. It explores their use in gastrointestinal disorders, infections, cancer prevention, allergies, asthma, and other disorders. It also discusses the use of these supplements in infant, elderly, and animal nutrition, and reviews regulations and safety issues.

Therapeutic, Probiotic, and Unconventional Foods - Alexandru Mihai Grumezescu 2018-04-18

Therapeutic, Probiotic and Unconventional Foods compiles the most recent, interesting and innovative research on unconventional and therapeutic foods, highlighting their role in improving health and life quality, their implications on safety, and their industrial and economic impact. The book focuses on probiotic foods, addressing the benefits and challenges associated with probiotic and prebiotic use. It then explores the most recently investigated and well-recognized nutraceutical and medicinal foods and the food products and ingredients that have both an impact on human health and a potential therapeutic effect. The third and final section explores unconventional foods and discusses intriguing and debated foods and food sources. While research has been conducted on the beneficial biological effects of probiotics and therapeutic food, the use of these foods remains controversial. To overcome the suspicion of the use of alternative, homeopathic and traditional products as therapy, this book reveals and discusses the most recent and scientifically sound and confirmed aspects of the research. Compiles the most recent, interesting and innovative research on unconventional and therapeutic foods Highlights the role of unconventional and therapeutic foods in improving health and life quality Discusses the implications of unconventional and therapeutic foods on safety Presents the industrial and economic impact of unconventional and therapeutic foods

Probiotics, Prebiotics, and Synbiotics - Ronald Ross Watson 2015-09-23

Probiotics, Prebiotics, and Synbiotics: Bioactive Foods in Health Promotion reviews and presents new hypotheses and conclusions on the effects of different bioactive components of probiotics, prebiotics, and synbiotics to prevent disease and improve the health of various populations. Experts define and support the actions of bacteria; bacteria modified bioflavonoids and prebiotic fibrous materials and vegetable compounds. A major emphasis is placed on the health-promoting activities and bioactive components of probiotic bacteria. Offers a novel focus on synbiotics, carefully designed prebiotics probiotics combinations to help design functional food and nutraceutical products Discusses how prebiotics and probiotics are complementary and can be incorporated into food products and used as alternative medicines Defines the variety of applications of probiotics in health and disease resistance and provides key insights into how gut flora are modified by specific food materials Includes valuable information on how prebiotics are important sources of micro-and macronutrients that modify body functions

Prebiotics, Probiotics and Nutraceuticals - 2022

The book titled Prebiotics, Probiotics and Nutraceuticals is expected to direct many emerging research pathways need at local and global levels for nutrition and food supplements for developing immunity for healthy life. This volume incorporates sixteen seminal papers on issue based research and their practical applications covering latest information and progress on different area of nutritional supplement research fight against disease. The book highlights the frontier issues and applications in nutritional biotechnology with wide coverage of the themes like Potentiality of Probiotics in Inactivation of Tetrodotoxin, Therapeutic Strategy for the Deterrence of COVID-19 with Relevance to Probiotics and Prospectives of Prebiotics, Probiotics and Synbiotics for Sustainable Development in Aquaculture. Plant based Bioactive compounds in Cancer Therapeutics, Recent Trends in Natural Medicines and Nutraceuticals Research, Probiotics as efficacious therapeutic option for treating gut-related diseases: molecular and immune-biological perspectives, The progressive development of probiotics, prebiotics, synbiotics research, and its multipurpose use in the ornamental fishery, The commercial perspective of probiotics, and bioremediating components in aquaculture

pond management: A Case Study and Prebiotics as promising therapeutics for treating gut-related disorders : Biochemical and Molecular Perspectives. Prebiotics and Probiotics as Functional Foods: Prospect and Promises in Metabolic Diseases, Implications of probiotics and prebiotics on immune functions. Recent Trends in Natural Medicines and Nutraceuticals Research, Nutraceuticals are alternative to modern medicines, Socio-Economic Study of Prospective of probiotic, prebiotic and synbiotic for sustainable development of aquaculture in Indian Sunderban. This book will be very useful for the scholars, biotechnologists, agricultural scientists, nutritionist, medical doctors, researchers, teachers and students in the emerging field of biotechnology.

Clinical Studies on Nutraceuticals and Dietary Supplements - Sreeraj Gopi 2022-10-29

The book, Clinical Studies in Nutraceuticals and Dietary Supplements, presents extensive information on all the vital aspects and evidence-based studies on nutraceuticals and dietary supplements. The most fascinating part of this book is that the chapters explore the key concept accompanying an emphasis on recent research and developments on nutraceuticals and dietary supplements to tackle various diseases including maternal and fetal health, cancer, cardiovascular, renal disorders, hepatic disorders, hormonal disorders, and neurological dysfunction. The introspection carries updated literature reviews with relevant vital topics, quality illustrations, and well-organized tables for a better understanding of each segment. The current market scenario of these nutraceuticals and dietary supplements is the emphasis on their importance for a healthy and disease-controlled environment. This book will be useful to research scholars and scientists, as well as individuals working in the nutraceutical, dietary supplement, and functional food industries. This is an initiative to unveil the immense wealth that these nutraceuticals and dietary supplements hold and a realization of the fact that more evidence-based studies are required for its use to curb maladies and foster a healthy lifestyle.

Frontiers and New Trends in the Science of Fermented Food and Beverages - Rosa Lidia Solís-Oviedo 2019-02-20

From time immemorial fermented foods have undoubtedly contributed to the progress of modern societies. Historically, ferments have been present in virtually all human cultures worldwide, and nowadays natives from many ancient cultures still conduct a wide variety of food fermentations using deep-rooted recipes and processes. Within the last four centuries, scientific research has started to unravel many aspects of the biological process behind fermentations, which has contributed to the improvement of many industrial processes. During our journey in the research field, we have always been attracted to the development of scientific research around fermentations, especially autochthonous ferments: a natural repository of novel biomolecules and biological processes that will positively impact on many application fields from health, to food, to materials.

Prebiotics and Probiotics: A New Era of Nutraceuticals - Preetha Bhadra 2020-12-25

Coronavirus Disease - COVID-19 - Nima Rezaei 2021-05-10

In December 2019, the world witnessed the occurrence of a new coronavirus to humanity. The disease spread quickly and became known as a pandemic globally, affecting both society and the health care system, both the elderly and young groups of people, and both the men's and women's groups. It was a universal challenge that immediately caused a surge in scientific research. Be a part of a world rising in fighting against the pandemic, the Coronavirus Disease - COVID-19 was depicted in the early days of the pandemic, but updated by more than 200 scientists and clinicians to include many facets of this new infectious pandemic, including i, characteristics, ecology, and evolution of coronaviruses; ii, epidemiology, genetics, and pathogenesis (immune responses and oxidative stress) of the disease; iii, diagnosis, prognosis, and clinical manifestations of the disease in pediatrics, geriatrics, pregnant women, and neonates; iv, challenges of co-occurring the disease with tropical infections, cardiovascular diseases, hypertension, and cancer and to the settings of dentistry, hematology, ophthalmology, and pharmacy; v, transmission, prevention, and potential treatments, ranging from supportive ventilator support and nutrition therapy to potential virus- and host-based therapies, immune-based therapies, photobiomodulation, antiviral photodynamic therapy, and vaccines; vi, the resulting consequences on social lives, mental health, education, tourism industry and economy; and vii, multimodal approaches to solve the problem by bioinformatic methods, innovation and ingenuity,

globalization, social and scientific networking, interdisciplinary approaches, and art integration. We are approaching December 2020 and the still presence of COVID-19, asking us to call it COVID (without 19).

Probiotics - Adriano Brandelli 2021-12-15

Probiotics: Advanced Food and Health Applications presents the functional properties and advanced, technological aspects of probiotics for food formulation, nutrition and health implications. Specifically, the book addresses the fundamentals of probiotics, from their discovery to actual developments, the microbiological aspects of the main genus showing probiotic properties, the natural occurrence of probiotic strains in foods, the development of nutraceuticals based on probiotics, and the relationships of probiotics with health. Finally, the book covers regulatory aspects. Food scientists, nutritionists, dieticians, pharmaceutical scientists and others working in, or studying, related fields will benefit from this resource. Introduces basic concepts on probiotics and describes the properties of main microorganisms with applications in probiotics Provides a description on the natural presence of probiotics in different food matrixes and how probiotics can be developed for incorporation in food formulations Offers advice on how probiotics can be used as nutritional input, along with their value on the preservation of healthy intestinal status, and their potential benefits in specific illnesses Contains definitions, applications, literature reviews and recent developments Includes a general introduction to the subject, taxonomy, biology, primary sources of probiotics and development of probiotics as food ingredients, human nutrition and health properties, and the use of high-throughput technologies in probiotics characterization

Probiotics and Bioactive Carbohydrates in Colon Cancer Management - Maya Raman 2015-11-05

This book describes the dietary habits (such as use of probiotics, synbiotics, prebiotics and dietary fiber) that could modify and reduce the risk of developing colorectal cancer (CRC). The book will be of practical and scientific use to academicians, research scholars, students, health professionals, nutritionists, etc. and could support the cause of preventing CRC by adopting smarter food habits. CRC is the third leading cause of death, in terms of both incidence and mortality, among men and women. Excess consumption of red and processed meat, roasted coffee, etc. have shown an increase in CRC, indicating that compounds formed in food containing free amino acids and sugars interact at elevated temperatures to form mutagens or carcinogens. Standard treatment options for CRC include invasive surgery and chemotherapy or radiation. Several lifestyle and dietary factors could prevent this ailment. Probiotics, prebiotics and synbiotics that are found in functional foods, health supplements and nutraceuticals and short chain fatty acids that are formed in the colon as a result of microbial fermentation of undigested bioactive carbohydrates by *Bifidobacterium* and *Lactobacillus* inhibit colonic epithelial cells and minimize inflammation, thereby exhibiting immunomodulatory effects. This book tries to address the novel unexplored benefits and mechanism of action of these functional foods.

Gut Microbiota in Neurologic and Visceral Diseases - Tahira Farooqui 2021-03-11

Gut Microbiota in Neurologic and Visceral Diseases presents readers with comprehensive information on the involvement of microbiota in the pathogenesis of neurological disorders. Chapters cover the effect of microbiota on the development of visceral (obesity, type 2 diabetes, heart disease) and neurological disorders (Alzheimer's disease, Parkinson's, depression, anxiety, and autism). Sections focus on the molecular mechanisms and signal transduction processes associated with the links among microbiota-related visceral and neurological disorders. It is hoped that this discussion will not only integrate and consolidate knowledge in this field but will also jumpstart more studies on the involvement of microbiota in the pathogenesis of neurological disorders. Reviews the relationship between gut microbiome, diseases and disorders Discusses the relationship between diet, microbiota and inflammation Includes neurodegenerative, neuropsychiatric and cardiovascular disorders Covers diabetes, obesity and metabolic disorders Identifies molecular mechanisms and signal transduction processes Encompasses dietary fiber, fat, prebiotics and probiotics

Food, Consumers, and the Food Industry - Gordon W. Fuller 2001-01-29

During the past, there have been many changes in food availability, production and selection around the world. These changes, such as genetically modified foods, raise questions about their long-range

implications. How will they affect the worldwide economics and management of agriculture? food legislation? the environment? the determination of food

Nutraceuticals - Ramesh C. Gupta 2021-01-27

Nutraceuticals: Efficacy, Safety and Toxicity, Second Edition, brings together everything that is currently known about nutraceuticals and their potential toxic effects. The book introduces readers to nutraceuticals, herbal medicines, Ayurvedic medicines, prebiotics, probiotics, adaptogens, and their uses and specific applications. This essential reference discusses the mechanism of action for the judicious use of these nutraceuticals and the best tools for their evaluation before detailing the safety and toxicity of nutraceuticals and interactions with other therapeutic drugs. Finally, and crucially, regulatory aspects from around the world are covered. Completely revised and updated, this updated edition provides toxicologists, pharmacologists, pharmaceutical scientists, and those interested in medicinal plants and natural products with a comprehensive overview of the most effective tools upon which to evaluate the safety and toxicity of nutraceuticals, prebiotics, probiotics and alternative medicines. Presents a completely revised and updated resource on the impact of nutraceuticals and various disease states such as diabetes and ophthalmic and dermal diseases Grants an overview of the current state-of-the-science of nutraceuticals, their use and applications, and known adverse effects Provides effective tools to evaluate the potential toxicity of any nutraceutical Includes details of regulatory issues as written by international experts

Functional Foods and Nutraceuticals in Metabolic and Non-communicable Diseases - Ram B. Singh 2021-11-30

Functional Foods and Nutraceuticals in Metabolic and Non-communicable Diseases presents strategies for the prevention of non-communicable diseases and undernutrition through the use of functional foods and nutraceuticals. Research has shown that the use of certain functional foods and nutraceuticals, including spices, herbs, and millets, animal foods and plant foods can play a role in the treatment and prevention of various diseases and in health promotion. Finally, the book explores epigenetic modulation as a new method for the development of functional foods and functional farming. Intended for nutritionists, food scientists and those working in related health science professions, this book contributes to the discussions focused on nutritional transition, globalization, how to administer foods in the treatment of metabolic syndrome, hypertension, diabetes, heart attacks, neuropsychiatric disorders, bone and joint diseases, and carcinogenesis. Places emphasis on food diversity to provide perfect combinations of nutritional ingredients Presents the utility and necessity of functional food production for health promotion Offers suggestions to increase functional food production while simultaneously decreasing production costs

Nutraceuticals in Veterinary Medicine - Ramesh C. Gupta 2019-05-21

This unique work compiles the latest knowledge around veterinary nutraceuticals, commonly referred to as dietary supplements, from ingredients to final products in a single source. More than sixty chapters organized in seven sections collate all related aspects of nutraceutical research in animal health and disease, among them many novel topics: common nutraceutical ingredients (Section-I), prebiotics, probiotics, synbiotics, enzymes and antibacterial alternatives (Section-II), applications of nutraceuticals in prevention and treatment of various diseases such as arthritis, periodontitis, diabetes, cognitive dysfunctions, mastitis, wounds, immune disorders, and cancer (Section-III), utilization of nutraceuticals in specific animal species (Section-IV), safety and toxicity evaluation of nutraceuticals and functional foods (Section-V), recent trends in nutraceutical research and product development (Section-VI), as well as regulatory aspects for nutraceuticals (Section-VII). The future of nutraceuticals and functional foods in veterinary medicine seems bright, as novel nutraceuticals will emerge and new uses of old agents will be discovered. International contributors to this book cover a variety of specialties in veterinary medicine, pharmacology, pharmacognosy, toxicology, chemistry, medicinal chemistry, biochemistry, physiology, nutrition, drug development, regulatory frameworks, and the nutraceutical industry. This is a highly informative and carefully presented book, providing scientific insight for academia, veterinarians, governmental and regulatory agencies with an interest in animal nutrition, complementary veterinary medicine, nutraceutical product development and research.

Nutraceutical and Functional Food Processing Technology - Joyce I. Boye 2015-01-27

For several years, the food industry has been interested in identifying

components in foods which have health benefits to be used in the development of functional food and nutraceutical products. Examples of these ingredients include fibre, phytosterols, peptides, proteins, isoflavones, saponins, phytic acid, probiotics, prebiotics and functional enzymes. Although much progress has been made in the identification, extraction and characterisation of these ingredients, there remains a need for ready and near-market platform technologies for processing these ingredients into marketable value-added functional food and nutraceutical products. This book looks at how these ingredients can be effectively incorporated into food systems for market, and provides practical guidelines on how challenges in specific food sectors (such as health claims and marketing) can be addressed during processing. Nutraceutical and Functional Food Processing Technology is a comprehensive overview of current and emerging trends in the formulation and manufacture of nutraceutical and functional food products. It highlights the distinctions between foods falling into the nutraceutical and functional food categories. Topics include sustainable and environmentally-friendly approaches to the production of health foods, guidelines and regulations, and methods for assessing safety and quality of nutraceutical and functional food products. Specific applications of nutraceuticals in emulsion and salad dressing food products, beverages and soft drinks, baked goods, cereals and extruded products, fermented food products are covered, as are novel food proteins and peptides, and methods for encapsulated nutraceutical ingredients and packaging. The impact of processing on the bioactivity of nutraceutical ingredients, allergen management and the processing of allergen-free foods, health claims and nutraceutical food product commercialization are also discussed. Nutraceutical and Functional Food Processing Technology is a comprehensive source of practical approaches that can be used to innovate in the nutraceutical and health food sectors. Fully up-to-date and relevant across various food sectors, the book will benefit both academia and industry personnel working in the health food and food processing sectors.

Sports and Energy Drinks - Alexandru Grumezescu 2019-05-14

Sports and Energy Drinks, Volume 10 in The Science of Beverages series, is the first single-volume resource to focus on the science behind these beverages-for-purpose products. As consumers seek ways to effectively replenish key nutrients after strenuous activity—while also balancing calories and vitamin intake—sports and energy drinks is one of the fastest growing markets in the industry. From protein to fruit, athlete to adolescent consumption, this book explores the key issues and challenges in developing products that meet consumer demand in a safe-and-effective manner. This series takes a multidisciplinary approach to help research and development professionals understand the scientific complexities of these unique beverages. As demand for sports and energy drinks is growing and with a more competitive market, this timely and useful resource will equip industry professionals with the tools they need to create new and innovative health-promoting products. Presents new findings on the health effects of sports and energy drinks Provides research analysis of existing products to promote new product innovation Includes information on trace minerals to promote safety and quality

Advances in Probiotics - Dharumaurai Dhansekaran 2021-07-15

Advances in Probiotics: Microorganisms in Food and Health highlights recent advances in probiotic microorganisms, commercial probiotics, safety aspects of probiotics, preparation and commercialization, microbiome therapy for diseases and disorders, and next generation probiotics. This is a comprehensive resource of developments of new formulations and products for probiotic and prebiotic food with focus on the microorganisms to enable effective probiotic delivery. The book deliberates contemporary trends and challenges, risks, limitations in probiotic and prebiotic food to deliver an understanding not only for research development purposes but also to benefit further standardize industrial requirements and other techno-functional traits of probiotics. At present there is no solitary volume to describe the probiotics and prebiotics properties, Advances in Probiotics: Microorganisms in Food and Health provides novel information to fill the overall gap in the market. It presents the most current information on probiotic and prebiotics for the food industry. This book is a valuable resource for academicians, researchers, food industrialists, and entrepreneurs. Presents a simulated gastrointestinal system to analyze the probiotics effects on gut microbiome for learning purpose Includes research information on Next Generation Probiotics to foster new formulations Provides comprehensive information on probiotic microorganism behavior for more accurate analysis Discusses the potential of probiotic and prebiotic foods in preventing disease

Tumor Microenvironment - Alexander Birbrair 2020-10-29

Revealing essential roles of the tumor microenvironment in cancer progression, this book focuses on the role of hematopoietic components of the tumor microenvironment. Further, it teaches readers about the roles of distinct constituents of the tumor microenvironment and how they affect cancer development. Topics include eosinophils, NK cells, $\gamma\delta$ T cells, regulatory T Cells, Langerhans cells, hematopoietic stem cells, Mast cells, B cells and Microglia, and more. Taken alongside its companion volumes, Tumor Microenvironment: Hematopoietic Cells - Part B updates us on what we know about various aspects of the tumor microenvironment as well as future directions. This book is essential reading for advanced cell biology and cancer biology students as well as researchers seeking an update on research in the tumor microenvironment.

Herbs, Spices and Their Roles in Nutraceuticals and Functional Foods - Augustine Amalraj 2022-11-25

Herbs, Spices and Their Roles in Nutraceuticals and Functional Foods gives an overview of the many pharmacological activities associated with herbs and spices, including detailed coverage on their mechanisms and formulations for the food industry. Chapters focus on key ingredients such as Curcuma longa, Piper Nigrum and Trigonella foenum-graecum, with contributors across the globe providing the latest research and advances for each. This is an essential read for scientists who want to understand the fundamental mechanisms behind the bioactive compounds within herbs and spices. The numerous phytochemicals present in plant extracts have multiple pharmacological activities so there is extensive research into new bioactive compounds. The pharmacological activities of herbs and spices have been thoroughly investigated, and it is crucial that the latest research is organized into a comprehensive resource. Presents chapters that are organized by specific herb or spice, providing comprehensive coverage of mechanism and innovative formulations Provides in-depth analysis of multiple pharmacological activities Includes detailed coverage surrounding the food industry

Spectrums of Amyotrophic Lateral Sclerosis - Christopher A. Shaw 2021-04-19

SPECTRUMS OF AMYOTROPHIC LATERAL SCLEROSIS Discover state-of-the-art research findings on ALS from leading authors and editors in the field In Spectrums of Amyotrophic Lateral Sclerosis: Heterogeneity, Pathogenesis & Therapeutic Directions, distinguished researchers and editors Dr. Christopher A. Shaw and Jessica R. Morrice deliver a practical and powerful perspective on Amyotrophic Lateral Sclerosis (ALS) as a heterogeneous spectrum of disorders. This increasingly accepted point-of-view allows researchers and medical professionals to develop better targeted interventions and more precise therapies. In the book, readers will find chapters on a wide variety of critical issues facing ALS researchers and healthcare practitioners treating ALS sufferers, including animal models of ALS, neuronal support cells known to have a pivotal role in ALS, and current challenges in ALS clinical trials, among others. The authors describe pathologic features common to all cases of ALS and why animal models, though crucial, should be interpreted with caution. Finally, multiple genetic and environmental etiologies of the disease are discussed. Readers will also benefit from the inclusion of: A thorough introduction to ALS as a spectrum disease and the implications for models, therapeutic development and clinical trial design

Explorations of the genetic basis of ALS, prospective sALS etiologies, and the involvement of microbiome in ALS Discussions of ALS-PDC and environmental risk factors, protein aggregation in ALS, defects in RNA metabolism in ALS, and the non-cell autonomous nature of ALS and the involvement of glial cells Examinations of animal models of ALS and perspectives on previously failed ALS therapeutics and current therapeutic strategies Perfect for clinical neurologists, healthcare providers and caretakers, clinicians, and researchers studying motor neuron disease, Spectrums of Amyotrophic Lateral Sclerosis: Heterogeneity, Pathogenesis & Therapeutic Directions is also an indispensable resource for the neurodegenerative research community, neurology residents, and graduate-level neuroscience students.

Probiotics, Prebiotics and Synbiotics - Parmjit Singh Panesar 2022-01-18

In Probiotics, Prebiotics and Synbiotics: Technological Advancements Towards Safety and Industrial Applications, a team of distinguished researchers delivers an insightful exploration of various aspects of functional foods. The book includes information about critical facets of the production of these beneficial compounds, recent technological developments in the field, and their present and future commercial

potential. The authors describe their mechanisms of action and their applications in several sectors. Probiotics, Prebiotics and Synbiotics is divided into five parts. A general introduction about these substances begins the book and is followed by discussions of common probiotics, prebiotics, and synbiotics. Finally, a treatment of safety issues and regulatory claims, as well as their market potential, rounds out the resource. Perfect for researchers, industry practitioners, and students working in or studying food processing and food microbiology, Probiotics, Prebiotics and Synbiotics is also an invaluable resource for professionals working in the field of food biotechnology.

Prebiotics and Probiotics in Disease Regulation and Management - Rajesh Kumar Kesharwani 2022-09-27

PREBIOTICS AND PROBIOTICS IN DISEASE REGULATION AND MANAGEMENT The book covers all the emerging technologies and the challenges related to the synthesis and application of prebiotics and probiotics including the recent developments in the delivery of prebiotics, probiotics for the treatment of various diseases, the immune-boosting activity of the emerging prebiotics and probiotic ingredients, and the anti-cancer and anti-tumor potential. The demand for biobased products is increasing enormously, among which are prebiotic oligosaccharides and probiotics, which occupy a major share of the food industry. Even though the majority of agro waste is currently being used for the production of 2G biofuels, agro waste such as citrus peel, sugar beet pulp, copra meal, and wheat husk can be considered for the production of prebiotic oligosaccharides. Prebiotics are dietary fibers that are selectively fermented by the microbes present in the gut and promote the growth of beneficial bacteria in the intestine and regulate the growth of harmful bacteria. The book highlights the importance of nutraceuticals (prebiotics, and probiotics) in maintaining gut homeostasis, prevention, and treatment of gut-related disorders, as anti-cancer agents, immune-modulatory agents, and treatment of metabolic disorders. It brings out the current challenges involved in the formulation and development of nutraceuticals, together with the application of nanotechnology and bioinformatics-based approaches to study the effect of nutraceuticals on oral health, and gut microflora in a very precise way. Audience The book will be read by food scientists and biotechnologists, as well as researchers in nutraceuticals and food processing research companies, nutraceutical/supplement product developers, and those in pharmaceutical companies.

Handbook of Prebiotics and Probiotics Ingredients - Susan Sungsoo Cho 2009-11-19

While there is little dispute that probiotics and prebiotics, alone and together, have been proven to promote gastrointestinal health and proper immune function, the challenge faced by researchers is finding not only the right combinations, but also finding those that are fully compatible with the formulation, processing, packaging, and distribution.

New and Future Developments in Microbial Biotechnology and Bioengineering - Ali Asghar Rastegari 2020-05-15

New and Future Developments in Microbial Biotechnology and Bioengineering: Trends of Microbial Biotechnology for Sustainable Agriculture and Biomedicine Systems: Perspectives for Human Health discusses how microbial biotechnology helps us understand new strategies to reduce pathogens and drug resistance through microbial biotechnology. The most commonly used probiotic bacteria are Lactobacillus and Bifidobacterium. Therefore, the probiotic strains exhibit powerful anti-inflammatory, antiallergic and other important properties. This new book provides an indispensable reference source for engineers/bioengineers, biochemists, biotechnologists, microbiologists, pharmacologists, and researchers who want to know about the unique properties of this microbe and explore its sustainable biomedicine future applications. Introduces the principles of microbial biotechnology and its application for sustainable biomedicine system Explores various microbes and their beneficial application for biofortification of crops for micronutrients Explains the potentials and significance of probiotics, prebiotics and synbiotics in health and disease Includes current applications of beneficial microbes as Functional Food Products of Pharmaceutical Importance

Nutraceutical and Functional Foods in Disease Prevention - Keservani, Raj K. 2018-07-13

Current research on health, nutrition, and preventative care will always be in demand. As the battles against ailments such as diabetes and heart disease continue, medical professionals are seeking to create a healthier society through nutrition and dietary-based tactics. Nutraceutical and Functional Foods in Disease Prevention is a comprehensive publication providing current research on the dynamic fields of pharmaceutical and

biomedical science in relation to nutrition. This book examines the interactions and associations between nutritive value and its therapeutic applications in human health. Touching on topics such as the impact of probiotics in human health and disease treatment, recent trends in functional foods for obesity management, and the clinical role of antioxidants in the treatment of diseases, this title proves a valuable resource for academicians, healthcare practitioners, medical researchers, and higher education students preparing for careers as health professionals.

Handbook of Prebiotics - Glenn R. Gibson 2008-01-29

In order to achieve optimal digestion, absorption, and nutritional health, we must have appropriate populations of positive microflora. Prebiotics are functional foods that improve health by fortifying indigenous probiotics within the gut. This fast-growing area of nutrition and microbiology is rapidly amassing data and answering many questions about the necessity and benefit of such functional foods. Gathering contributions from leading experts in a range of disciplines, Handbook of Prebiotics presents a balanced view of the current knowledge in many different areas of the field. It discusses concept, definition and criteria for classification of a food component as prebiotics. It then describes interactions with gut microbiota. Highlighting varying levels of evidence and agreement, the book presents current arguments for and against prebiotic intake. Contributions discuss the biomechanics of prebiotics and their effects on immune status, serum lipid concentrations, mineral bioavailability, and satiety modulation. They consider the health implications of prebiotic intake such as reduced incidence of gastroenteritis and chronic pathogenic gut disorders, including intestinal cancers and inflammatory bowel diseases. Providing well-rounded coverage, the book explores the varying effects of prebiotics in different populations and age groups such as infants and the elderly, as well as livestock and pets. The final chapters describe food avenues and the safety implications for prebiotic use. Spanning several disciplines including food science, nutrition, microbiology, biotechnology, and the health sciences, this seminal work makes a point to include sound research science and well-balanced views on the potential of prebiotics for promoting good health.

Nutraceuticals and Innovative Food Products for Healthy Living and Preventive Care - Verma, Amit 2017-11-30

The proper nutrition can aid disease prevention and ensure an overall healthy lifestyle. In nutrition, certain natural and processed foods are particularly useful in achieving and maintaining health goals. Nutraceuticals and Innovative Food Products for Healthy Living and Preventive Care is a comprehensive reference source for the latest research findings on food components that provide health and medical benefits, including the prevention, treatment, and cures for numerous diseases. Featuring extensive coverage on relevant areas such as functional foods, alternative medicine, and nutrition, this publication is an ideal resource for medical practitioners, nutritionists, upper-level students, researchers, and academicians seeking information on the use of food products in health management.

Innovations in Technologies for Fermented Food and Beverage Industries - Sandeep Kumar Panda 2018-04-09

This book covers innovations in starter culture, production of health beneficial fermented food products, technological intervention in beer, wine and spirits production, marketing of alcoholic beverages, modernization of dairy plants for production of fermented dairy products, non-dairy probiotics, development of automatic fermenters, and packaging technology. Furthermore, it includes genetic engineering for improved production and quality improvement of food and beverages, which allows forecasting of the quality of the final product. Specifically this includes applications of hybrid methods combining multivariate statistics and computational intelligence, the role of consumers in innovation of novel food and beverages, and IPRS in respect to food and beverages. Innovations in Technologies for Fermented Food and Beverage Industries is a resource for students, researchers, professionals in the industry, as well as governments in their efforts to adopt technologies of their interest.

Advances in Nutraceuticals and Functional Foods - Sreerag Gopi 2022-05-19

This book examines the rapidly growing field of functional foods in the prevention and management of chronic and infectious diseases. Chapters explore the varied sources, biochemical properties, metabolics, health benefits, and safety of bioactive ingredients of nutraceutical and functional food products. Special emphasis is given to linking the molecular and chemical structures of biologically active components in

foods to their nutritional and pharmacological effects on human health and wellness. In addition to discussing scientific and clinical rationales for different sources of functional foods, the book also explains in detail scientific methodologies used to investigate the functionality, effectiveness, and safety of bioactive ingredients in food. The chapter authors discuss advanced nanocarriers for nutraceuticals based on structured lipids and nonlipids, nanoparticulate approaches for improved nutrient bioavailability, adulteration and safety issues, nanodelivery systems, microencapsulation, and more. The book discusses some particular health benefits from nutrition nutraceuticals, including probiotic dairy and non-dairy products and bioactive proteins and peptides as functional foods. The volume also gives an overview of emerging trends, growth patterns, and new opportunities in the field of nutraceuticals and functional foods.

Functional Foods - Navnidhi Chhikara 2022-02-23

Functional Foods Presenting cutting-edge information on new and emerging food engineering processes, Functional Foods, the second volume in the groundbreaking new series, "Bioprocessing in Food Science," is an essential reference on the modeling, quality, safety, and technologies associated with food processing operations today.

Functional Foods, the second volume in series, "Bioprocessing in Food Science," is an up-to-date, comprehensive volume covering the preparation, processes and health benefits of functional foods. Written and edited by a team of experts in the field, this important new volume provides readers extensive knowledge about different types of traditional and commercially available functional foods from different sources, such as milk, meat, cereals, millets and fruits and vegetables. The main objective of this book is to disseminate knowledge about the recent technologies developed in the field of functional foods to students, researchers, and industry professionals. This will enable them to make crucial decisions regarding the adoption, implementation, economics, and constraints of the different technologies. As the demand for healthy food is increasing, manufacturers are searching for new possibilities for occupying a growing share in the rapidly changing food market. Covering the use of conventional and non-conventional sources, prebiotics, probiotics and many other topics, with emphasis on their functionality in food systems, this volume also provides insights on the specific packaging requirements for functional foods with maximum illustrations of how to enhance shelf life and create superior quality products. The authors and editors discuss the need for regulatory

frameworks, government bodies, guidelines, and their challenges within the context of the functional food market. Whether for the veteran engineer or scientist, the student, or a manager or other technician working in the field, this volume is a must-have for any library. This outstanding new volume: Discusses an overview of functional foods including global regulations, legislations and packaging requirements Provides knowledge of functional ingredients and health benefits of functional foods from different plants, animals, and microbes sources Acquaints the readers about technological aspects for functional ingredients delivery Addresses the basic to advanced aspects of different functional foods, combining the requirements, health benefits and regulations, showcasing the development of functional food products with potential functional benefits Audience: Process and chemical engineers, chemists, engineers in other disciplines, managers, researchers, scientists, students, and teachers working in the field of food engineering and processing

Prebiotics and Probiotics Science and Technology - Dimitris Charalampopoulos 2009-08-12

A comprehensive overview on the advances in the field, this volume presents the science underpinning the probiotic and prebiotic effects, the latest in vivo studies, the technological issues in the development and manufacture of these types of products, and the regulatory issues involved. It will be a useful reference for both scientists and technologists working in academic and governmental institutes, and the industry.

Grapes and Wine - Antonio Morata 2022-06-15

Grape and Wine is a collective book composed of 18 chapters that address different issues related to the technological and biotechnological management of vineyards and winemaking. It focuses on recent advances, hot topics and recurrent problems in the wine industry and aims to be helpful for the wine sector. Topics covered include pest control, pesticide management, the use of innovative technologies and biotechnologies such as non-thermal processes, gene editing and use of non-Saccharomyces, the management of instabilities such as protein haze and off-flavors such as light struck or TCAs, the use of big data technologies, and many other key concepts that make this book a powerful reference in grape and wine production. The chapters have been written by experts from universities and research centers of 9 countries, thus representing knowledge, research and know-how of many regions worldwide.