

Probiotics Prebiotics And Synbiotics In Health

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Aquaculture Nutrition - Daniel L. Merrifield 2014-08-13

Manipulation of the microbial gut content of farmed fishes and crustaceans can have a marked effect on their general health, growth, and quality. Expertly covering the science behind the use of prebiotics and probiotics this landmark book explains how the correct manipulation of the gut flora of farmed fishes and crustaceans can have a positive effect on their health, growth rates, feed utilization, and general wellbeing. *Aquaculture Nutrition: Gut Health, Probiotics and Prebiotics* provides a comprehensive overview of the current knowledge of the gut microbiomes of fish and their importance with respect to host-fish health and performance, providing in-depth, cutting-edge fundamental and applied information. Written by many of the world's leading authorities and edited by Dr Daniel Merrifield and Professor Einar Ringø, this important book discusses in detail the common mechanisms for modulating microbiomes, particularly at the gut level (e.g. probiotics, prebiotics and synbiotics). The book is a key resource for an understanding of the historical development of these products, their known mechanisms of action and their degree of efficacy as presently demonstrated in the literature. The fundamental material provided on the gut microbiota itself, and more broad aspects of microbe-live feed interactions, provide essential reading for researchers, academics and students in the areas of aquaculture nutrition, fish veterinary science, microbiology, aquaculture, fish biology and fisheries. Those involved in the development and formulation of aquaculture feeds and those with broader roles within the aquaculture industry will find a huge wealth of commercially-important information within the book's covers. All libraries in universities and research establishments where biological sciences, nutrition and aquaculture are studied and taught, should have copies of this excellent book on their shelves.

Bioactive Foods in Promoting Health - Ronald Ross Watson 2010-04-06

Bioactive Foods in Health Promotion: Probiotics and Prebiotics brings together experts working on the different aspects of supplementation, foods, and bacterial preparations, in health promotion and disease prevention, to provide current scientific information, as well as providing a framework upon which to build clinical disease treatment studies. Since common dietary bacterial preparations are over-the-counter and readily available, this book will be useful to the growing nutrition, food science, and natural product community that will use it as a resource in identifying dietary behavioral modifications in pursuit of improved health as well as for treatment of specific disease, as it focuses on the growing body of knowledge of the role of various bacteria in reducing disease risk and disease. Probiotics are now a multi-billion-dollar, dietary supplement business which is built upon extremely little research data. In order to follow the 1994 ruling, the U.S. Food and Drug Administration with the support of Congress is currently pushing this industry to base its claims and products on scientific research. Research as shown that dietary habits need to be altered for most people whether for continued or improved good health. The conclusions and recommendations from the various chapters in this book will provide a basis for those important factors of change by industry with new uses. Animal studies and early clinical ones will lead to new uses and studies. Particularly the cutting edge experimental and clinical studies from Europe will provide novel approaches to clinical uses through their innovative new studies. Feature: Heavy emphasis on clinical applications (benefits and/or lack thereof) as well as future biomedical therapeutic uses identified in animal model studies Benefits: Focused on therapies and data supporting them for application in clinical medicine as complementary and alternative medicines Feature: Key insights into gut flora and the potential health benefits thereof. Benefit: Health scientists and nutritionists will use this information to map out key areas of research.

Food scientists will use it in product development. Feature: Information on pre- and probiotics as important sources of micro- and macronutrients Benefit: Aids in the development of methods of bio-modification of dietary plant molecules for health promotion. Feature: Coverage of a broad range of bacterial constituents Benefits: Nutritionists will use the information to identify which of these constituents should be used as dietary supplements based on health status of an individual Feature: Science-based information on the health promoting characteristics of pre- and probiotics Benefits: Provides defense of food selections for individual consumption based on health needs and current status Feature: Diverse international authoring team experienced in studying prebiotics and probiotics for medical practice Benefits: Unusually broad range of experiences and newly completed clinical and animal studies provides extended access to latest information

Neuroscience of Nicotine - Victor R. Preedy 2019-03-20

Neuroscience of Nicotine: Mechanisms and Treatment presents the fundamental information necessary for a thorough understanding of the neurobiological underpinnings of nicotine addiction and its effects on the brain. Offering thorough coverage of all aspects of nicotine research, treatment, policy and prevention, and containing contributions from internationally recognized experts, the book provides students, early-career researchers, and investigators at all levels with a fundamental introduction to all aspects of nicotine misuse. With an estimated one billion individuals worldwide classified as tobacco users—and tobacco use often being synonymous with nicotine addiction—nicotine is one of the world's most common addictive substances, and a frequent comorbidity of misuse of other common addictive substances. Nicotine alters a variety of neurological processes, from molecular biology, to cognition, and quitting is exceedingly difficult because of the number of withdrawal symptoms that accompany the process. Integrates cutting-edge research on the pharmacological, cellular and molecular aspects of nicotine use, along with its effects on neurobiological function Discusses nicotine use as a component of dual-use and poly addictions and outlines numerous screening and treatment strategies for misuse Covers both the physical and psychological effects of nicotine use and withdrawal to provide a fully-formed view of nicotine dependency and its effects

The Bifidobacteria and Related Organisms - Paola Mattarelli 2017-09-20

The Bifidobacteria and Related Organisms: Biology, Taxonomy, Applications brings together authoritative reviews on all aspects of Bifidobacteria and related genera. Their place within the Phylum Actinobacteria is discussed first, and this is followed by descriptions of the genera Bifidobacterium, Alloscardovia, Aeriscardovia, Bombiscardovia, Gardnerella, Metiscardovia, Pariscardovia and Scardovia and the currently accredited species within those genera. The increased availability of genome sequences and molecular tools for studying bifidobacteria provides important information about their taxonomy, physiology and interactions with their host. Also considerations about common bifidobacterial core maintenance during the mutual coevolution of a host and its intestinal microbes could be relevant for health claims for the ability of symbiotic gut bacteria to provide health benefits to their host, and for evaluating such claims in scientifically valid experiments. Chemotaxonomy is important to our understanding of these genera and so is considered along with physiological and biochemical aspects before proceeding to examine clinical and other practical aspects. The ability to maintain pure cultures and to grow cells in industrial quantities when required for applications requires that the cells' environmental and nutritional needs are well understood. Some species are important clinically and as animal digestive tract symbionts—and even play a part in honey production—so these matters are considered along with milk oligosaccharides' roles in

gut flora development in neonates. Presents information on all bacteria in this group in one place Provides applications and technological considerations placed alongside more academic matters such as nomenclature and phylogeny Includes basic information on the beneficial role of bifidobacteria in the human gut, with particular importance for infants Provides information on genomic and gene modification technologies

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

Human Microbes - The Power Within - Vasu D. Appanna 2018-02-05

This book offers a unique perspective on the invisible organ, a body part that has been visualized only recently. It guides the readers into the world of the microbial constituents that make humans the way they are. The vitamins they produce, the smell they generate, the signals they create, and the molecular guards they elaborate are some of the benefits they bestow on humans. After introducing the notion as to why microbes are an integral component in the development of humans, the book examines the genesis of the microbiome and describes how the resident bacteria work in partnership with the skin, digestive tract, sexual organs, mouth and lungs to execute vital physiological functions. It then discusses the diseases that are triggered by the disruption of the harmonious relationships amongst these diverse systems and provides microbial cures to ailments such as obesity and digestive complications. Finally, the book focuses on the future when the workings of the human microbes will be fully unravelled. Societal changes in health education, the establishment of the microbiome bank, the fight against hunger, space travel, designer traits and enhanced security are explained. Each chapter is accompanied by captivating illustrations and ends with a visual summary. Dr. Appanna has been researching for over 30 years on various aspects of microbial and human cellular systems. He is a professor of biochemistry and has also served as Department Chair and Dean of the Faculty at Laurentian University, Sudbury, Canada. The book is aimed at readers enrolled in medical, chiropractic, nursing, pharmacy, and health science programs. Practicing health-care professionals and continuing education learners will also find the content beneficial.

Neuroscience of Alcohol - Victor R. Preedy 2019-03-19

Neuroscience of Alcohol: Mechanisms and Treatment presents the fundamental information necessary for a thorough understanding of the neurobiological underpinnings of alcohol addiction and its effects on the brain. Offering thorough coverage of all aspects of alcohol research, treatment and prevention, and containing contributions from internationally recognized experts, the book provides students, early-career researchers, and investigators at all levels with a fundamental introduction to all aspects of alcohol misuse. Alcohol is one of the world's most common addictive substances, with about two billion individuals worldwide consuming it in one form or another and three million annual deaths that are associated with alcohol misuse. Alcohol alters a variety of neurological processes, from molecular biology, to cognition. Moreover, addiction to alcohol can lead to numerous other health concerns and damage virtually every organ system in the body, making diagnosis and treatment of individuals addicted to alcohol of critical importance. Integrates cutting-edge research on the pharmacological, cellular and molecular aspects of alcohol use, along with its effects on

neurobiological function Discusses alcohol use as a component of dual-use and poly addictions Outlines numerous screening and treatment strategies for alcohol misuse Covers both the physical and psychological effects of alcohol use and withdrawals to provide a fully-formed view of alcohol dependency and its effects

Prebiotics and Probiotics - 2020-03-04

Probiotic bacteria are found in the intestinal microbiota of the host and favor multiple metabolic reactions. Prebiotics provide food for probiotic bacteria and have an effect on their own performance in favor of host health. Numerous metabolic and immunological mechanisms are involved in its effects. Probiotics have been studied for several decades and their use for human consumption is still unclear. However, new types of molecules with prebiotic functions and components of probiotic bacteria with therapeutic potential are still being studied. The versatility of these molecules makes their incorporation into human food and animal diets feasible. This book is a compendium of recent scientific information on the use of probiotics and prebiotics for the benefit of human and animal health.

Functional Foods and Nutraceuticals - Chukwuebuka Egbuna 2020-08-24

Functional foods and nutraceuticals are food products that naturally offer or have been modified to offer additional health benefits beyond basic nutrition. As such products have surged in popularity in recent years, it is crucial that researchers and manufacturers understand the concepts underpinning functional foods and the opportunity they represent to improve human health, reduce healthcare costs, and support economic development worldwide. *Functional Foods and Nutraceuticals: Bioactive Components, Formulations and Innovations* presents a guide to functional foods from experienced professionals in key institutions around the world. The text provides background information on the health benefits, bioavailability, and safety measurements of functional foods and nutraceuticals. Subsequent chapters detail the bioactive components in functional foods responsible for these health benefits, as well as the different formulations of these products and recent innovations spurred by consumer demands. Authors emphasize product development for increased marketability, taking into account safety issues associated with functional food adulteration and solutions to be found in GMP adherence. Various food preservation methods aimed at enhancing the quality and shelf life of functional food are also highlighted. *Functional Foods and Nutraceuticals: Bioactive Components, Formulations and Innovations* is the first of its kind, designed to be useful to students, teachers, nutritionists, food scientists, food technologists and public health regulators alike.

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.

Microbial Biofilms - Chaminda Jayampath Seneviratne 2017-07-12

Microbial Biofilms: Omics Biology, Antimicrobials and Clinical Implications is a comprehensive survey of microbial biofilms and their role in human health and disease with contributions from world renowned experts in molecular microbiology, proteomics, genomics, metabolomics and infectious diseases. The book is intended to serve as a guide for students, as well as a reference for researchers, clinicians and industry professionals. The chapters cover bacterial and fungal microbiomes, and the latest omics techniques organized in a clear and up-to-date manner. One of the highlights of this book is the comprehensive information on "omics of microbial biofilms". The chapters dedicated to metagenomics, proteomics and metabolomics are designed to provide a simple and holistic review of the current knowledge and, the applications of these techniques in the field of microbial biofilms. In addition to introductory chapters on microbial biofilms and their clinical implications, subsequent chapters delve into oral biofilms, their composition, and metagenomic diversity. Thereafter, mechanisms of drug resistance in microbial biofilms are reviewed, as well as the proteomic and metabolomic characterization of this resistance. The book includes a comprehensive discussion of persister cells and host-microbial interactions on mucosal surfaces. Finally, the book concludes with a summary of novel therapeutic approaches for biofilms such as synbiotics and biogenics.

Uric Acid in Chronic Kidney Disease - A. Treviño-Becerra 2018-01-23

Hyperuricemia is often associated with life-style related disorders such as diabetes mellitus, hypertension, and dyslipidemia, which, in turn, are major causes of CKD. Improved management of hyperuricemia is thus expected to be beneficial for both the general population and CKD patients. This book presents new information on uric acid in tubular transport, early recognition of renal lesions, genetic predisposition, preeclampsia, metabolic syndrome, diabetes, high blood pressure in the young, and the relationship with vitamin D. Moreover, the relationship between AKI and uric acid, as well as the rejection of renal transplants due to hyperuricemia, are discussed. This publication will be of interest to both general practitioners and researchers working in the field of CKD. It provides new insights into renal damage caused by hyperuricemia and into prevention and treatment possibilities.

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

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

Food Biotechnology - Ulf Stahl 2008-08-05

This resource examines trends in modern biotechnology, covering all aspects of this interdisciplinary field.

Handbook of Probiotics and Prebiotics - Yuan Kun Lee 2009-02-17

Since the publication of the first edition in 1999, the science of probiotics and prebiotics has matured greatly and garnered more interest. The first handbook on the market, *Handbook of Probiotics and Prebiotics: Second Edition* updates the data in its predecessor, and it also includes material topics not previously discussed in the first edition, including methods protocols, cell line and animal models, and coverage of prebiotics. The editors supplement their expertise by bringing in international experts to contribute chapters. This second edition brings together the information needed for the successful development of a pro- or prebiotic product from laboratory to market.

The Neuroscience of Cocaine - Victor R. Preedy 2017-05-23

The Neuroscience of Cocaine: Mechanisms and Treatment explores the complex effects of this drug, addressing the neurobiology behind cocaine use and the psychosocial and behavioral factors that impact cocaine use and abuse. This book provides researchers with an up-to-date understanding of the mechanisms behind cocaine use, and aids them in deriving new pharmacological compounds and therapeutic regimens to treat dependency and withdrawal symptoms. Cocaine is one of the most highly abused illicit drugs worldwide and is frequently associated with other forms of drug addiction and misuse, but researchers are still struggling to understand cocaine's neuropharmacological profile and the mechanisms of its effects and manifestations at the cognitive level. Cessation of cocaine use can lead to numerous adverse withdrawal conditions, from the cellular and molecular level to the behavioral level of the individual user. Written by worldwide experts in cocaine addiction, this book assists neuroscientists and other addiction researchers in unraveling the many complex facets of cocaine use and abuse. Contains

in each chapter an abstract, key facts, mini dictionary of terms, and summary points to aid in understanding Illustrated in full color Provides unique full coverage of all aspects of cocaine and its related pathology Provides researchers with an up-to-date understanding of the mechanisms behind cocaine use, and aids them in deriving new pharmacological compounds and therapeutic regimens to treat dependency and withdrawal symptoms

Improving Gut Health in Poultry - Steven C. Ricke 2019-07-26

This collection summarises current research on the composition and function of the gastrointestinal tract in poultry, the factors that affect its function, and nutritional strategies to optimise poultry nutrition, health and environmental impact. Part 1 begins by summarising advances in sequencing and omics technologies to understand gut function. It then reviews our current understanding of the gut microbiota, the development of the gut microbiome over the life of the bird, and gut function in nutrient processing and immune response. The second part of the book reviews what we know about factors affecting gut function and health. Chapters cover gastrointestinal diseases, the interaction between pathogens and the gut as well the impact of antibiotics. The final group of chapters discuss current research on the effectiveness of feed additives in optimising gut health, including probiotics, prebiotics, synbiotics, antimicrobials, essential oils and other botanicals as well as cereal grains. With its distinguished editor and team of expert chapter authors, this will be a standard reference for poultry scientists, poultry feed manufacturers and the poultry farming community.

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.

Antibacterial Drug Discovery to Combat MDR - Iqbal Ahmad 2019-11-09

This book compiles the latest information in the field of antibacterial discovery, especially with regard to the looming threat of multi-drug resistance. The respective chapters highlight the discovery of new antibacterial and anti-infective compounds derived from microbes, plants, and other natural sources. The potential applications of nanotechnology to the fields of antibacterial discovery and drug delivery are also discussed, and one section of the book is dedicated to the use of computational tools and metagenomics in antibiotic drug discovery. Techniques for efficient drug delivery are also covered. The book provides a comprehensive overview of the progress made in both antibacterial discovery and delivery, making it a valuable resource for academic researchers, as well as those working in the pharmaceutical industry.

Probiotic Bacteria - J. Paulo Sousa e Silva 2014-04-02

Compiled by an expert editorial team with noteworthy and remarkable experience, this book covers technological aspects related to probiotics, not only in terms of delivery modes but also in terms of protection technologies. It includes discussions of their therapeutic and physiologic implications and benefits, and provides a contemporary update and a holistic review of the topic. It focuses on the technological aspects of probiotic products, brings together the information needed for their successful development, and examines the international picture regarding regulatory issues.

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.

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, 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

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.

Bioactive Compounds in Fermented Foods - Amit Kumar Rai 2021-11-30

The volume reviews different types of bioactive components associated with food fermentation and their impact on human health. The diversity of microorganism responsible for the production of different types of fermented foods and beverages includes bacteria, yeasts, and fungi. Biotransformation of food constituent by microorganisms occurs during fermentation processes for the production of fermented food and in the gastrointestinal tract by gut microorganisms. This biotransformation results in production of specific bioactive compounds that are responsible for a wide range of health benefits. The bioactive compounds discussed in this book includes polyphenols, bioactive peptides,

fibrinolytic enzymes, gama-amino butyric acids (GABA) exopolysaccharides, probiotic, prebiotic, symbiotic and antinutritional factors. These bioactive compounds are responsible for health benefits such as antioxidant, antihypertension, antimicrobial, cholesterol lowering, anticancer, obesity and antithrombotic properties. Advanced research in the field of food fermentation and their health benefits have resulted in commercialization of some of the fermented foods as functional foods. The traditional fermented foods consumed in different parts of the world and their health benefits are discussed in detail and the book concludes with recent advances in microbial transformation during gut fermentation and their impact on human health. There has been increasing interest among researchers on the proposed title in the last decade and the book brings updated information on research and advances in different types of health benefits exhibited by bioactive compounds in a wide range of fermented foods.

Probiotics and Prebiotics - Koen Venema 2015

Composed of nearly a thousand different types of micro-organisms, some beneficial, others not, the human gut microbiota plays an important role in health and disease. This is due to the presence of probiotic or beneficial microbes, or due to the feeding of prebiotics that stimulate the endogenous beneficial microbes: these promote health by stimulating the immune system, improving the digestion and absorption of nutrients, and inhibiting the growth of pathogens. The notable health benefits of probiotic organisms have stimulated much commercial interest, which in turn has led to a plethora of research initiatives in this area; these range from studies to elucidate the efficacy of the various health benefits to analyses of the diet-microbe interaction as a means of modulating the gut microbiota composition. Research in this area is at a very exciting stage. With state-of-the-art commentaries on all aspects of probiotics and prebiotics research, this book provides an authoritative and timely overview of the field. Written by leading international researchers, each chapter affords a critical insight to a particular topic, reviews current research, discusses future direction and aims to stimulate discussion. Topics range from the different microorganisms used as probiotics (lactobacilli, bifidobacteria, yeast, etc) and techniques and approaches used (metagenomics, etc) to the reviews of the clinical and medical aspects. The provision of extensive reference sections positively encourages readers to pursue each subject in greater detail. Containing 33 chapters, the book is an invaluable source of information and essential reading for everyone working with probiotics, prebiotics and the gut microbiotflora, from the PhD student to the experienced scientist, in academia, the pharmaceutical or biotechnology industries and working in clinical environments.

Prebiotics and Probiotics - Flavia Indrio 2018-09-19

This book is a printed edition of the Special Issue "Prebiotics and Probiotics" that was published in *Nutrients*

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.

Gut Feelings - Alessio Fasano 2022-03-22

Why the microbiome—our rich inner ecosystem of microorganisms—may hold the keys to human health. We are at the dawn of a new scientific revolution. Our understanding of how to treat and prevent diseases has been transformed by knowledge of the microbiome—the rich ecosystem of microorganisms in and on every human. These microbial hitchhikers may hold the keys to human health. In *Gut Feelings*, Alessio Fasano and Susie Flaherty show why we must go beyond the older, myopic view of microorganisms as our enemies to a broader understanding of the microbiome as a parallel civilization that we need to understand, respect, and engage with for the benefit of our own health. Recent advances in understanding the microbiome and its role in human health dovetail with

the development of personalized or “precision” medicine to create treatments and prevention programs targeted to the molecular imprint of an individual. Fasano and Flaherty explore the microbiome's part in such diseases as gut inflammatory disorders, obesity, neurological conditions, and cancer, and they explain new research in prebiotics, probiotics, synbiotics, and psychobiotics. They also discuss the microbiome and immune function, including a possible role in COVID-19 treatment. By simultaneously expanding our perspective to encompass large datasets and multiple factors in human health, and narrowing our focus to identify the individual communities in the human microbiome, we will enlarge—and perhaps reinvent—our understanding of how to combat disease and maintain health.

Aquaculture Nutrition - Daniel L. Merrifield 2014-10-20

Manipulation of the microbial gut content of farmed fishes and crustaceans can have a marked effect on their general health, growth, and quality. Expertly covering the science behind the use of prebiotics and probiotics this landmark book explains how the correct manipulation of the gut flora of farmed fishes and crustaceans can have a positive effect on their health, growth rates, feed utilization, and general wellbeing. *Aquaculture Nutrition: Gut Health, Probiotics and Prebiotics* provides a comprehensive overview of the current knowledge of the gut microbiomes of fish and their importance with respect to host-fish health and performance, providing in-depth, cutting-edge fundamental and applied information. Written by many of the world's leading authorities and edited by Dr Daniel Merrifield and Professor Einar Ringø, this important book discusses in detail the common mechanisms for modulating microbiomes, particularly at the gut level (e.g. probiotics, prebiotics and synbiotics). The book is a key resource for an understanding of the historical development of these products, their known mechanisms of action and their degree of efficacy as presently demonstrated in the literature. The fundamental material provided on the gut microbiota itself, and more broad aspects of microbe-live feed interactions, provide essential reading for researchers, academics and students in the areas of aquaculture nutrition, fish veterinary science, microbiology, aquaculture, fish biology and fisheries. Those involved in the development and formulation of aquaculture feeds and those with broader roles within the aquaculture industry will find a huge wealth of commercially-important information within the book's covers. All libraries in universities and research establishments where biological sciences, nutrition and aquaculture are studied and taught, should have copies of this excellent book on their shelves.

Probiotics and Prebiotics in Animal Health and Food Safety - Diana Di Gioia 2018-02-27

This book discusses the role of probiotics and prebiotics in maintaining the health status of a broad range of animal groups used for food production. It also highlights the use of beneficial microorganisms as protective agents in animal derived foods. The book provides essential information on the characterization and definition of probiotics on the basis of recently released guidelines and reflecting the latest trends in bacterial taxonomy. Last but not least, it discusses the concept of “dead” probiotics and their benefits to animal health in detail. The book will benefit all professors, students, researchers and practitioners in academia and industry whose work involves biotechnology, veterinary sciences or food production.

Nutrition and Immune Function - Philip C. Calder 2002-01-01

This text provides a review of the roles of specific nutrients in maintaining the immune response and host protection against infection. It also considers the influence of various factors, such as exercise and ageing, on the interaction between nutrition and immune function.

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.

Nutrition and Lifestyle for Pregnancy and Breastfeeding - Peter Gluckman 2015

Explaining the practical implications of new discoveries in life-course biology, this is an informed resource on factors that affect offspring development.

Pediatric Neurogastroenterology - Christophe Faure 2016-11-25

This volume provides a comprehensive and up-to-date theoretical review and practical guide on pediatric gastrointestinal motility and functional disorders. The latest edition includes extensively revised and new chapters to reflect the rapidly growing field of pediatric neurogastroenterology. New topics covered include neurobiology of pain in children, functional oropharyngoesophageal assessment, dysautonomia, and psychotropic drugs. The text also features instructive illustrations, photographs, and tables. Written by world-renown experts in the field, *Pediatric Neurogastroenterology: Gastrointestinal Motility and Functional Disorders in Children, Second Edition* is a valuable resource for pediatric gastroenterologists, adult gastroenterologists, pediatricians, and all professionals involved in the treatment and management of children with such disorders.

Colonic Microbiota, Nutrition and Health - Glenn Gibson 1999-08-31

This book reviews the microbiology of the human gastrointestinal tract and how its composition and activities may affect host welfare. Drawing on the expertise of internationally recognised authors, a comprehensive account of gut microbiology is given. In particular, the nature of the microbiota, the fermentation process, gut flora modulation through diet (probiotics, prebiotics), molecular approaches for studying the bacteria, health outcomes associated with colonic microbial function and consumer aspects are all detailed. It is now believed that gut function, and colonic bacteria specifically, can play an important role in human nutrition and health. Whilst it has long been realised that the gastrointestinal microbiota can affect host well-being, the full extent of this interaction is only now emerging. This book gives a balanced review of current knowledge on how gut flora can be optimised for improved health and on some of the more important target outcomes. Its contents will therefore be of topical relevance to scientists and students involved in microbiology, gastroenterology, nutrition and the food industry.

Dietary Interventions in Gastrointestinal Diseases - Ronald Ross Watson 2019-01-10

Dietary Interventions in Gastrointestinal Diseases: Foods, Nutrients and Dietary Supplements provides valuable insights into the agents that affect metabolism and other health-related conditions in the gastrointestinal system. It provides nutritional treatment options for those suffering from gastrointestinal diseases including Crohn's Disease, Inflammatory Bowel Disease, Ulcerative Colitis and Allergies, among others. Information is presented on a variety of foods, including herbs, fruits, soy and olive oil, thus showing that changes in intake can change antioxidant and disease preventing non-nutrients and affect gastrointestinal health and/or disease promotion. This book serves as a valuable resource for biomedical researchers who focus on identifying the causes of gastrointestinal diseases and food scientists targeting health-related product development. Provides information on agents that affect metabolism and other health-related conditions in the gastrointestinal tract. Explores the impact of composition, including differences based on country of origin and processing techniques to highlight compositional differences and their effect on the gastrointestinal tract. Addresses the most positive results from dietary interventions using bioactive foods to impact gastrointestinal diseases, including reduction of inflammation and improved function of organs.

Probiotics and Prebiotics in Human Nutrition and Health - Venketeshwer Rao 2016-07-13

Probiotic microorganisms are recognised as being beneficial for human health. Prebiotics are substrates that are used preferentially by the probiotic bacteria for their growth. A great deal of interest has been generated in recent years in identifying probiotic bacteria and prebiotics, their characterization, mechanisms of action and their role in the prevention and management of human health disorders. Together they are referred to as synbiotic. This book is in response to the need for more current and global scope of probiotics and prebiotics. It contains

chapters written by internationally recognized authors. The book has been planned to meet the needs of the researchers, health professionals, government regulatory agencies and industries. This book will serve as a standard reference book in this important and fast-growing area of probiotics and prebiotics in human nutrition and health.

Probiotics For Dummies - Shekhar Challa 2012-04-04

Discover the pros of probiotics Probiotics are beneficial, live microorganisms (in most cases, bacteria) that are similar to those found naturally in the human intestine. Also known as "friendly" or "good" bacteria, probiotics are the cornerstone of any successful health program because they restore a healthy balance between friendly and bad bacteria in the intestinal tract, a balance that is critical for the health of the entire body. Probiotics are associated with treating everything from

IBS to certain forms of cancer, allergies, eczema, and even the effects of aging. Probiotics For Dummies reveals how taking the right probiotics—in the form of food and supplements— as part of a total health program benefits one's overall health, as well as improving specific conditions. This hands-on, essential guide features 20 probiotic recipes and gives you a step-by-step plan for infusing probiotics into your diet to improve the health of the GI tract, alleviate allergies and asthma, restore reproductive and urinary tracts, bolster the immune system against disease, enhance weight loss, and more. Advice on how to ingest the right probiotics 20 probiotic recipes from breakfast to dessert Information on naturally occurring probiotic compounds as well as the effectiveness of supplements Probiotics For Dummies gives you everything you need to make informed decisions about adding probiotics to your daily diet.