Marine Nutraceuticals And Functional Foods Crcnetbase

Two of the most popular nutraceutical products on the market, omega-3 oil and glucosamine, were originally derived from waste products. Discarded oil from the manufacture of fishmeal became wildly popular as omega-3, a polyunsaturated fat, and the fully hydrolyzed chitosan from shrimp and crab shell, glucosamine, found wide use in joint health. Hundreds of tons of marine by-products are available annually and previous commercial success, together with an overall consumer interest in novel healthy food ingredients, are driving both research and commercialization in the area of marine nutraceuticals.

Edited by pioneers in the field, Marine Nutraceuticals and Functional Foods details information on a variety of commercially available and newly developing value-added products. Beginning with an overview of current marine nutraceuticals, the book discusses the origin of omega-3 oils, their beneficial effects on brain health, and their stabilization and delivery into functional foods. It covers the derivation and use of chitin, chitosan, and partially hydrolyzed chitosan as fat- and cholesterol absorbing agents and provides a detailed review of the health benefits and methods for the production of glucosamine. Providing an overview of the ACE-inhibitory and blood pressure reducing properties of marine proteins, it considers the functional constituents of marine algae and seaweed, including its carotenoids, and examines the cancer preventing potential of shark cartilage. The book also analyzes the use of marine microorganisms as a renewable resource and marine sources of calcium. The final chapter describes the discovery and development of a novel immunoenhancing polysaccharide complex derived from the microalgae, Chlorella. An unparalleled single-source reference to the discovery, development, and use of value-added products from marine sources, Marine Nutraceuticals and Functional Foods provides the foundation for continuing the dramatic growth in this exciting field.

Seafoods covers selected but vital topics of fish processing with an emphasis on quality, technology and nutraceutical applications in an up-to-date survey. The aspects of seafood quality covered range from the impact of slaughter procedures, through protein functionality, texture, flavour, histamine toxicity to the practical evaluation of quality and measurement. Technological aspects concentrate on automation in processing, waste-water treatment and reuse of scraps. Marine nutraceuticals/functional foods are discussed in detail. This book is highly recommended for scientists and technologists in the seafood industries, plus fish processing professionals, quality managers, and nutritionists.

Reviews the research on seaweed and microalgae, the use and quality information on make lipids and seafood proteins as ingredients in functional foods and consumer acceptance of (marine) functional food. This volume on medicinal foods from the sea narrates the bioactive principles of various marine floral (vertebrate and Invertebrate), faunal (Macro and Micro algal) and microbial sources. Contributions from eminent scientists worldwide explain about the latest advance implications in the development and application of marine originated functional foods, as potential pharmaceuticals and medicines for the benefit of humankind by meeting the present nutraceutical demands. The latest important information for food scientists and nutritionists Peer-reviewed articles by a panel of respected scientists The go-to series since 1948

The global market of foods with health claims remains highly dynamic and is predicted to expand even further. Consumers have become increasingly aware of the importance of consuming healthy foods in order to have a well-balanced diet and this has increased the demand for foods with health benefits. On the other hand, the food sector companies are trying to meet the new consumers’ expectations while designing a variety of novel, enhanced products. Thus, understanding the potential uses of bioactive compounds in food products, the wide range of therapeutic effects, and the possible mechanisms of action is essential for developing healthier products. Covering important aspects of valuable food molecules, this book revises the current knowledge, providing scientifically demonstrated information about the benefits and uses of functional food components, their applications, and the future challenges in nutrition and diet.

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 industries. 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.

Algae have a long history of use as foods and for the production of food ingredients. There is also increasing interest in their exploitation as sources of bioactive compounds for use in functional foods and nutraceuticals. Functional ingredients from algae for foods and nutraceuticals reviews key topics in these areas, encompassing both macroalgae (seaweeds) and microalgae. After a chapter introducing the concept of algae as a source of biologically active ingredients for the formulation of functional foods and nutraceuticals, part one explores the structure and occurrence of the major algal components. Chapters discuss the chemical structures of algal polysaccharides, algal lipids, fatty acids and sterols, algal proteins, phlorotannins, and pigments and minor compounds. Part two highlights biological properties of algae and algal components and includes chapters on the antioxidant properties of algal components, anticancer agents derived from marine algae, anti-obesity and anti-diabetic activities of algae, and algae and cardiovascular health. Chapters in part three focus on the extraction of compounds and fractions from algae and cover conventional and alternative technologies for the production of algal polysaccharides. Further chapters discuss enzymatic extraction, subcritical water extraction and supercritical CO2 extraction of bioactives from algae, and ultrasonic- and microwave-assisted extraction and modification of algal components. Finally, chapters in part four explore applications of algae and algal components in foods, functional foods and nutraceuticals including the design of healthier foods and beverages containing whole algae, prebiotic properties of algae and algae-supplemented products, algal hydrocolloids for the production and delivery of probiotic bacteria, and cosmeceuticals from algae.

Functional ingredients from algae for foods and nutraceuticals is a comprehensive resource for chemists, chemical engineers and medical researchers interested in algae and those in the algal culture, food and nutraceutical industries interested in the commercialisation of products made from algae. Provides an overview of the major compounds in algae, considering both macroalgae (seaweeds) and microalgae Discusses methods for the extraction of bioactives from algae Describes the use of algae and products derived from them in the food and nutraceutical industries

Flavors are an integral part of nutraceutical formulations. Flavors offer significant advantage to Nutraceuticals when it comes to palatability and get an edge over other products in an extremely competitive nutraceutical market. Flavors for Nutraceutical and Functional Foods addresses different natural ingredients/botanicals used in various functional foods and nutraceutical products. The techniques of incorporating flavors in Nutraceutical products can be classified as conventional and using recently developed modern techniques such as nanotechnology are also covered in different chapters. These techniques are mainly used for masking the taste of nutraceutical and functional food products. The book discusses the basics of flavors and the significance of the flavor industry in relation to Nutraceuticals.
Bioactive ingredients in foods and their pharmacological and health effects. Functional foods and bioactives of microbial, plant and animal origin, including probiotics, herbs, spices, vegetables, specialty fruits, seafood and milk components. Impact on the microbiome, emerging metabolic pathways and prevention of chronic and infectious diseases. Techniques for functional food development and evaluation. Regulatory and safety considerations. This volume presents basic and advanced technical information on the sources, mechanisms and safety of food bioactives in the etiology and prevention of chronic and infectious diseases. In this context, it offers details useful not only for understanding but also improving the functionality of foods. It reviews advances in multiple phytochemicals and food ingredients known for positive effects on human physiology, including interactions with the human microbiome. Metabolomic and proteomic techniques are explored as ways of improving the understanding of mechanisms of action, and increasing the therapeutic effectiveness of selected food ingredients. Special attention is given to chemistry, molecular structure and pharmacological effects of bioactive ingredients. Bioactives from a wide range of foods are investigated, including pre- and probiotics, fungi, yeasts, herbs, spices, fruits, vegetables, seafood and many more. The text provides systematic information needed to develop and validate commercial products incorporating functional ingredients. The three volumes in this handbook highlight new research and current trends in food science and technology, looking at the most recent innovations, emerging technologies, and strategies focusing on taking food design to sustainable levels. In particular, the handbook focuses on modernization in the food industry, sustainable packaging, food bioprocesses, food fermentation, food microbiology, functional foods and nutraceuticals, natural products, nano- and microtechnology, healthy product composition, innovative processes and bioprocesses for utilization of by-products, development of novel preservation alternatives, extending the shelf life of fresh products, alternative processes requiring less energy or water, among other topics. Volume 3 of the 3-volume set focuses on functional foods and nutraceuticals. The chapters examine nutraceuticals as treatment for cancer and neurodegenerative diseases, trends in functional food in noncommunicable diseases, synergism in food trends, bioactive peptides, agave fructans as a functional component in foods, and more. This book addresses new applications of omega-3 fatty acids from both plant and marine sources in food supplements and pharmaceuticals and covers three basic areas: structure and function, production and processing, and health effects. The authors review the latest clinical evidence on the impact of consumption of omega-3 polyunsaturated fatty acids on prevalent human diseases such as inflammation-related illnesses in general and cardiovascular illnesses in particular. They also examine technologies to purify marine oils and protect them against oxidation as well as novel techniques for their incorporation into foods. Covers the role omega-3 plays in general health and disease and includes several reviews on the latest clinical evidence explains different methods to deliver omega-3 to the consumer, through various methods including food fortification, nutritional supplements, and more. Considerations for the processing of omega-3 oils to minimize conditions that could destroy the nutritional properties. Marine Nutraceuticals and Functional Foods CRC Press This book offers a comprehensive study of biological molecules acquired from marine organisms, which have been exploited for drug discovery with the aim to treat human diseases. Biomolecules have potential impacts on a diverse range of fields, including medical and pharmaceutical science, industrial science, biotechnology, basic research, molecular science, environmental science and climate change, etc. To understand and effectively apply medicinally important biomolecules, multidisciplinary approaches are called for. The ocean remains a rich biological resource, and the vast untapped potential of novel molecules from marine bio-resources has caught the interest of more and more researchers. These novel biological compounds have never been found in terrestrial or other ecosystems, but only in this rich niche. Advances in sampling techniques and technologies, along with increased funding for research and nature conservation, have now encouraged scientists to look deeper in the waters. Aquaculture supports both tremendous seafood production and the bulk production of marine-derived drugs. Furthermore, molecular methods are now being extensively employed to explore the untapped marine microbial diversity. With the help of molecular and biotech tools, the ability of marine organisms to produce new biosynthetic drugs can be greatly enhanced. This book provides an extensive compilation of the latest information on marine resources and their undisputed vital role in the treatment of diverse ailments. Considered Mother Nature's medicine cabinet in many areas of the world, marine organisms have been known from time immemorial to possess curative powers. But until recently, their bioactive compounds, nutraceutical properties, and commercial potential remained undiscovered. Bringing together widely scattered literature, Marine Products for Healthcare: Functional and Bioactive Nutraceutical Compounds from the Ocean discusses the importance of marine products as a source of nutraceuticals, food additives, and other useful ingredients in health protection and product formulation. The book begins with a discussion of the general characteristics of functional foods and an overview of the functionality of marine fishery products. It includes detailed discussions on nutraceutical and other functional properties of their seafood components including proteins, bioactive peptides, polyunsaturated fatty acids, polysaccharides, chondroitin, carotenoids, minerals, and shell waste products. Other chapters examine the role of seaweeds as food supplements, additives, and bioactive compounds; microalgae and corals rich in nutrients, pigments, and therapeutic agents; and secondary metabolites of corals, particularly sponges, that have potential as lifesaving drugs. The book also explores recent developments in food fortification, packaging, and drug delivery systems with particular reference with marine ingredients and concludes with a delineation of the safety hazards posed by some marine products. The science of discovering health promoting compounds from
Functional foods and nutraceuticals, dietary supplements, and natural antioxidants have established their potential roles in the protection of human health against disease. Historically, most of the research into carbohydrates as functional ingredients focused on the improvement of appearance, taste, mouth-feel, and stability. The growing interest in functional foods, however, is demanding a critical look at the beneficial nonnutritive effects of carbohydrates on human health. Furthermore, there is a need to establish definitive relations among the structure, physical property, and physiological function of these bioactive compounds. As more of the benefit and functional versatility of carbohydrates is revealed, it is clear that any future research and recommendation must be based on a solid synthesis of multidisciplinary findings including epidemiological, metabolic, and clinical nutritional data. Through clinical and epidemiological studies, Functional Food Carbohydrates addresses the specific classes of carbohydrates that seem to exert health-enhancing effects. The text begins with in-depth treatments of the chemistry, physical properties, processing technology, safety and health benefits of a variety of carbohydrates including cereal beta-glucans, microbial polysaccharides, chitosan, arabinoxylans, resistant starch, and other polysaccharides of plant origin. The authors then discuss the physiological and metabolic effects that a variety of carbohydrates have on specific chronic diseases such as cancer, diabetes, cardiovascular disease, obesity, and various gastrointestinal disorders. The final chapters discuss the regulatory and technological aspects of using carbohydrates as functional foods. Specifically, the authors consider the safety and efficacy of pre-, pro-, and synbiotics, and the potential use of carbohydrates as delivery vehicles for other bioactive compounds. With contributions from experts specializing in food chemistry and technology, as well as human nutrition and physiology, this text illuminates the link between the behavior of carbohydrate compounds and their beneficial end-result on human health.

Algae have been used since ancient times as food, fodder, fertilizer and as source of medicine. Nowadays seaweeds represent an unlimited source of the raw materials used in pharmaceutical, food industries, medicine and cosmetics. They are nutritionally valuable as fresh or dried vegetables, or as ingredients in a wide variety of prepared foods. In particular, seaweeds contain significant quantities of protein, lipids, minerals and vitamins. There is limited information about the role of algae and algal metabolites in medicine. Only a few taxa have been studied for their use in medicine. Many traditional cultures report curative powers from selected alga, in particular tropical and subtropical marine forms. This is especially true in the maritime areas of Asia, where the sea plays a significant role in daily activities. Nonetheless, at present, only a few genera and species of algae are involved in aspects of medicine and therapy. Beneficial uses of algae or algal products include those that may mimic specific manifestations of human diseases, production of antibiotic compounds, or improvement of human nutrition in obstetrics, dental research, thalassotherapy, and forensic medicine.

Functional foods and nutraceuticals, dietary supplements, and natural antioxidants have established their potential roles in the protection of human health against disease. Nutraceuticals and Functional Foods in Human Health and Disease Prevention examines the benefits, efficacy, and success of properly designed nutraceuticals and functional foods in human health and their possible application in disease prevention. The book demonstrates diverse disease pathophysiology and how nutraceuticals and functional food can be used to combat and prevent disease. The book discusses global food habits and trends, safety and toxicology, and how food addiction or overindulgence of food can lead to a variety of disease states. It then highlights how supplements help in disease prevention. Although a significant number of nutraceuticals and functional foods have demonstrated their efficacy, a large number of supplements are still surviving on false claims. Therefore, the editors underscore risks and benefits, and why government regulatory agencies are so critical of these nutraceutical supplements. With the global nutraceuticals market expected to reach $204.8 billion by 2017, what once seemed a very niche sector has become big business. An overview of nutraceuticals and functional foods and their application in human health, this book exhaustively covers antioxidants, functional foods, and nutraceuticals in human health and disease prevention. With contributions from experts and pioneers, the book gives insight into the role of functional foods in optimal diet and exercise.

Marine Bioenergy: Trends and Developments features the latest findings of leading scientists from around the world. Addressing the key aspects of marine bioenergy, this state-of-the-art text: Offers an introduction to marine bioenergy Explores marine algae as a source of bioenergy Describes biotechnological techniques for biofuel production Explains the production of bioenergy, including bioethanol, biomethane, biomethanol, biohydrogen, and biodiesel Covers bioelectricity and marine microbial fuel cell (MFC) production from marine algae and microbes Discusses marine waste for bioenergy Considers commercialization and the global market Marine Bioenergy: Trends and Developments provides a valuable springboard for marine bioenergy research and development, making the book a must-have reference for scientists, engineers, and students.
Scientific advances in this field have not only given us a better understanding of what is an optimal diet, but has allowed food and nutraceutical companies to market products with specific health claims, fortify existing foods, and even create new foods designed for a particular health benefit. Handbook of Nutraceuticals and Functional Foods, Second Edition, compiles the latest data from authoritative, scientific sources. It provides hard evidence on the prophylactic and medicinal properties of many natural foods. This handbook reviews more than 200 nutraceutical compounds. Each chapter includes the chemical properties, biochemical activity, dietary sources, and evidentiary findings for each compound. New topics include the use of exopolysaccharides from lactic acid bacteria, protein as a functional ingredient for weight loss, and nutraceuticals to be used in the adjunctive treatment of depression. Two new chapters discuss recent evidence on oxidative stress and the antioxidant requirements of athletes as well as the use of nutraceuticals for inflammation. The scientific investigation of nutrition and lifestyle changes on the pain and debilitation of osteoarthritis is the subject of another new article. The book concludes with a look at future marketing opportunities paying particular attention to the alleviation of obesity. With contributions from a panel of leading international experts, Handbook of Nutraceuticals and Functional Foods, Second Edition, provides instant access to comprehensive, cutting edge data, making it possible for food scientists, nutritionists, and researchers to utilize this ever growing wealth of information.

With wild stocks declining due to over-fishing, aquaculture will have a more significant role to play in meeting future demand for fresh fish. Developments in research continue to lead to improvements in aquaculture production systems, resulting in increased production efficiency, higher product quality for consumers and a more sustainable industry. New technologies in aquaculture reviews essential advances in these areas. Part one focuses on the genetic improvement of farmed species and control of reproduction, with chapters on genome-based technologies in aquaculture research, selective breeding and the production of single sex and sterile populations, among other topics. Parts two and three review key issues in health, diet and husbandry, such as the control of viral and parasitic diseases, diet and husbandry techniques to improve disease resistance, advances in diets for particular fish species and the impact of harmful algal bloom on shellfisheries aquaculture. Chapters in Parts three and four then examine the design of different aquaculture production systems, including offshore technologies, tank-based recirculating systems and ponds, and key environmental issues, such as the prediction and assessment of the impact of aquaculture. Concluding chapters focus on farming new species. With its well-known editors and distinguished international team of contributors, New technologies in aquaculture is an essential purchase for professionals and researchers in the aquaculture industry. Reviews recent advances in improvements in aquaculture production Focuses on the genetic improvement and reproduction of farmed species, including genome-based technologies Discusses key health issues, including advances in disease diagnosis, vaccine development and other emerging methods to control pathogens in aquaculture.

Bioactive Seaweed Substances for Functional Food Applications: Natural Ingredients for Healthy Diets presents various types of bioactive seaweed substances and introduces their applications in functional food products. Presenting summaries of the substances derived from seaweed, this book systematically explores new ingredients and the bioactive substances that are both environmentally friendly and highly beneficial to human health. This evidence-based resource offers an abundance of information on the applications of seaweed as a solution to meet an increasing global demand for sustainable food sources. It is an essential reference for anyone involved in seaweed substance research, seaweed processing, and food and health disciplines. Discusses the use of bioactive seaweed substances as a new class of food ingredients Outlines the use of seaweed as gelling agents used for food restructuring, coating and encapsulation Systematically explores new ingredients and the bioactive substances that are both environmentally friendly and highly beneficial to human health.

The global market for seafood products continues to increase year by year. Food safety considerations are as crucial as ever in this sector, and higher standards of quality are demanded even as products are shipped greater distances around the world. The current global focus on the connection between diet and health drives growth in the industry and offers commercial opportunities on a number of fronts. There is great interest in the beneficial effects of marine functional compounds such as omega-3 polyunsaturated fatty acids. Seafoods are well-known as low calorie foods, and research continues into the nutritional effects on, for example, obesity and heart disease. In addition, by-products of marine food processing can be used in nutraceutical applications. This book is a resource for those interested in the latest advances in the science and technology of seafood quality and safety as well as new developments in the nutritional effects and applications of marine foods. It includes chapters on the practical evaluation of seafood quality: novel approaches in preservation techniques; flavour chemistry and analysis; textural quality and measurement; packaging; the control of food-borne pathogens and seafood toxins. New research on the health-related aspects of marine food intake are covered, as well as the use of seafoods as sources of bioactives and nutraceuticals. The book is directed at scientists and technologists in academia, government laboratories and the seafood industries, including quality managers, processors and sensory scientists. This two-volume set explores the aspects of diversity of micro and macro algal forms, their traditional uses; their constituents which are of value for food, feed, specialty chemicals, bioactive compounds for several novel applications and bioenergy molecules. The industrial production systems, downstream processing, utilization of the biomass and the metabolites of importance for various applications are addressed. Innovations in production technologies, coupled with the biological activities of their novel metabolites and molecules, offer tremendous scope for the exploitation of these micro and macro algal forms through industrial production processes in a sustainable manner. These two volumes offer a treasure house of information to the students and researchers of plant sciences, biological sciences, agricultural sciences, foods and nutrition sciences, health sciences and environmental sciences. Their practical value will benefit professionals including agriculture and food experts, biotechnologists, ecologists, environmentalists, and...
biomass specialists. This set will also aid industries dealing with foods, nutraceuticals, pharmaceuticals, cosmeceuticals health care products, and bioenergy. There is a great deal of consumer interest in natural bioactive substances due to their health benefits. Offering the potential to provide valuable nutraceuticals and functional food ingredients, marine-derived compounds are an abundant source of nutritionally and pharmacologically active agents, with both chemical diversity and complexity. Functional Nutraceuticals is a broad umbrella term used to describe any product derived from food sources with extra health benefits in addition to the basic nutritional value found in foods. This book is a comprehensive look at two themes in the area: technical and biological considerations. Technical considerations include an in-depth look at the process of bioactive identification and extraction and factors controlling bioactive concentrations in food. It also includes details of how these products are regulated and the steps necessary to utilize these products in human populations. Biological considerations include looking at how these products can be used in the prevention and treatment of chronic diseases, and a discussion on the process of formulations and how these influence bioavailability. This will be the first book to comprehensively examine the entire process of nutraceutical development from food to supplement creation and all the important considerations in between. This serves as an excellent and up-to-date reference for food scientists, food chemists, researchers in nutraceuticals and human nutrition.

Functional foods and nutraceuticals have received considerable interest in the past decade largely due to increasing consumer awareness of the health benefits associated with food. Diet in human health is no longer a matter of simple nutrition: consumers are more proactive and increasingly interested in the health benefits of functional foods and their role in the prevention of illness and chronic conditions. This, combined with an aging population that focuses not only on longevity but also quality of life, has created a market for functional foods and nutraceuticals. A fully updated and revised second edition, Genomics, Proteomics and Metabolomics in Nutraceuticals and Functional Foods reflects the recent upsurge in "omics" technologies and features 48 chapters that cover topics including genomics, proteomics, metabolomics, epigenetics, peptideomics, nutrigenomics and human health, transcriptomics, nutriethics and nanotechnology. This cutting-edge volume, written by a panel of experts from around the globe reviews the latest developments in the field with an emphasis on the application of these novel technologies to functional foods and nutraceuticals. Novel drug delivery systems cover the approaches, formulation, technologies, and modes for transporting any pharmaceutical compound throughout the body to safely get the desired effect. A growing area of research is the use of herbal formulations for disease therapy. In combining these two areas of research, that of novel drug delivery systems and that of herbal formulations, the usefulness of herbs is not only proved but its future applications and effectiveness are studied. The move towards herbal-based novel drug delivery systems can benefit society in a multitude of advantageous ways. Enhancing the Therapeutic Efficacy of Herbal Formulations discusses and explores the ways of preparing herbal formulations loaded in novel drug delivery systems and the resultant improvement in efficacy of the effected drugs/herbs already available on the market. The chapters will highlight traditional and herbal formulations, the effects of novel drug delivery systems on herbal formulations, and the safe and effective preparation and effects of herbal formulations as a therapeutic intervention. This book is ideal for pharmacists, doctors, and researchers specializing in herbal therapeutics, along with practitioners, researchers, academicians, and students interested in how herbal-based novel drug delivery systems can benefit society. The aim and scope of this book is to highlight the sources, isolation, characterization and applications of bioactive compounds from the marine environment and to discuss how marine bioactive compounds represent a major market application in food and other industries. It discusses sustainable marine resources of macroalgal origin and gives examples of bioactive compounds isolated from these and other resources, including marine by-product and fisheries waste streams. In addition, it looks at the importance of correct taxonomic characterization.

"This report provides estimates of dietary supplement use for specific population groups over time. In addition to overall use of dietary supplements, this report focuses on estimates for specific nutrients consumed through dietary supplement use."—Cover.

Bioactive Proteins and Peptides as Functional Foods and Nutraceuticals highlights recent developments of nutraceutical proteins and peptides for the promotion of human health. The book considers fundamental concepts and structure-activity relations for the major classes of nutraceutical proteins and peptides. Coverage includes functional proteins and peptides from numerous sources including: soy, Pacific hake, bovine muscle, peas, wheat, fermented milk, eggs, casein, fish collagen, bovine lactoferrin, and rice. The international panel of experts from industry and academia also reviews current applications and future opportunities within the nutraceutical proteins and peptides sector. Sustained Energy for Enhanced Human Functions and Activity addresses the basic mechanistic aspects of energy metabolisms, the chemistry, biochemistry and pharmacology of a variety of botanical ingredients, micronutrients, antioxidants, amino acids, selected complexes, and other nutraceuticals which have demonstrated a boost in and the sustainability of functional energy. The role of exercise and physical activity is also discussed, and the conclusion addresses paradigm shifts in the field and envisions the future. Intended for researchers and industry professionals, the book is as an essential reference on the impact of proper nutrient balance on sustained energy. Serves as a comprehensive reference on natural products that can boost and sustain energy. Encompasses information on diverse energy ingredients and their potential role in optimal health and sustained energy. Conceptualizes the key features in diverse nutraceuticals that can boost sustained energy and well-being. Presents the intricate mechanistic aspects and balance between optimal and sustained energy. Addresses the pathophysiology.
and mechanistic insight of diverse nutraceuticals and functional foods that can help in maintaining optimal health and sustain functional energy.

Showcases the recent advances in microbial functional food applications across food science, microbiology, biotechnology, and chemical engineering. Microbial technology plays a key role in the improvement of biotechnology, cosmeceuticals, and biopharmaceutical applications. It has turned into a subject of expanding significance because new microbes and their related biomolecules are distinguished for their biological activity and health benefits. Encompassing both biotechnology and chemical engineering, Microbial Functional Foods and Nutraceuticals brings together microbiology, bacteria, and food processing/mechanization, which have applications for a variety of audiences. Pharmaceuticals, diagnostics, and medical device development all employ microbial food technology. The book addresses the recent advances in microbial functional foods and associated applications, providing an important reference work for graduates and researchers. It also provides up-to-date information on novel nutraceutical compounds and their mechanisms of action—catering to the needs of researchers and academics in food science and technology, microbiology, chemical engineering, and other disciplines who are dealing with microbial functional foods and related areas. Microbial Functional Foods and Nutraceuticals is: Ground-breaking: Includes the latest developments and research in the area of microbial functional foods and nutraceuticals Multidisciplinary: Applicable across food science and technology, microbiology, biotechnology, chemical engineering, and other important research fields Practical and academic: An important area of both academic research and new product development in the food and pharmaceutical industries Microbial Functional Foods and Nutraceuticals is an ideal resource of information for biologists, microbiologists, bioengineers, biochemists, biotechnologists, food technologists, enzymologists, and nutritionists.

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.

There is a great deal of consumer interest in natural bioactive substances due to their health benefits. Offering the potential to provide valuable nutraceuticals and functional food ingredients, marine-derived compounds are an abundant source of nutritionally and pharmacologically active agents, with both chemical diversity and complexity. Functional ingredients derived from marine algal, invertebrates, vertebrates, and microorganisms can help fill the need for novel bioactives to treat chronic conditions such as cancer, microbial infections, and inflammatory processes. With contributions from an international group of experts, Marine Nutraceuticals: Prospects and Perspectives provides a comprehensive account of marine-derived nutraceuticals and their potential health benefits. These include antioxidant, anticancer, antiviral, anticoagulant, antiobesity, antiallergic, anti-inflammatory, antibacterial, and radioprotective properties. The book focuses on various types of marine-derived compounds—such as secondary metabolites like phlorotannins and fucoxanthin, carotenoid pigments, chito-oligosaccharide derivatives from chitin and chitosan, bioactive peptides, and polysaccharides—presenting an overview of their nutraceutical activities. Chapters address neuroprotective properties of seaweeds, bioactive compounds in abalone, marine products and autoimmune disease, chitosan for weight management, anticancer actions of omega-3 fatty acids, chitosan in dentistry, and much more.

The book discusses the sources, isolation and purification, chemistry, functional interactions, applications, and industrial perspectives of marine-derived nutraceuticals. The inaugural book in the new CRC Press series, Nutraceuticals: Basic Research/Clinical Applications, it provides a state-of-the-art reference for all readers interested in this growing field—a rich source for new compounds with promising uses in the nutraceutical, medicinal, and functional food industries.

Most foods are considered functional in terms of providing nutrients and/or energy to sustain basic life, but nutraceuticals and functional foods are defined dietary foods that prevent or reverse a diseased state. Nutraceuticals and functional foods are intensively researched for their role in maintaining health and prevention of diseases. Increasing public awareness of the link between diet and health has boosted the consumption of these foods to unparalleled levels, particularly in countries where the population is ageing and health care costs are rising. The science behind these foods is growing rapidly not only because of the increasing number of new substances or type of novel foods, but also the regulatory bodies requiring more and more evidence on efficacy, mode-of-action and safety. The nutraceuticals market is growing rapidly, with a 2016 forecast value of $207 billion, according to a new report available on companiesandmarkets.com. The latest trend in nutraceuticals and functional foods sector has been the recovery of nutraceuticals from discarded fruits and vegetables. For example, a wave of possible new functional ingredients is being developed by the Irish Agriculture and Food Development Authority (Teagasc), some of which are derived from waste products. One of their findings has shown that onion peels, a common by-product of food processing, have a higher antioxidant activity than their flesh. Onions are rich in quercetin, a potent antioxidant, also found in apples, berries and other vegetables. This has opened a completely new research area by deriving the potentially important nutraceuticals and functional foods in much higher concentrations than their principal parts. In fact, this would bring in the verbatim of sustainable nutraceutical and functional food sector by putting the focus on the valuable wastes and their value-addition.