Marine Nutraceuticals And Functional Foods Crcnetbase

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 nutrtional properties.

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.

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.

Marine Nutraceuticals and Functional FoodsCRC Press

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 algae, 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, antidiabetic, antiallergic, anti-inflammatory, antihypertensive, 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 neuroprotecive 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.

Designed as the primary reference for the biotechnological use of macroalgae, this comprehensive handbook covers the entire value chain from the cultivation of algal biomass to harvesting and processing it, to product extraction and formulation. In addition to covering a wide range of product classes, from polysaccharides to terpenes and from enyzmes to biofuels, it systematically discusses current and future applications of algae-derived products in pharmacology, medicine, cosmetics, food and agriculture. In doing so, it brings together the expertise of marine researchers, biotechnologists and process

engineers for a one-stop resource on the biotechnology of marine macroalgae. 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 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 undisputedly vital role in the treatment of diverse ailments.

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. Functio

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 pro- and prebiotics, 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.

Reviews the research on seafood and health, the use and quality aspects of marine lipids and seafood proteins as ingredients in functional foods and consumer acceptance of (marine) functional food.

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.

Food proteins and bioactive peptides play a vital role in thegrowth and development of the body's structural integrity andregulation, as well as having a variety of other functionalproperties. Land animal-derived food proteins such as collagen andgelatine carry risks of contamination (such as BSE). Marine-derivedproteins, which can provide equivalents to collagen and gelatinwithout the associated risks, are becoming more popular amongconsumers because of their numerous health beneficial effects. Mostmarine-derived bioactive peptides are currently underutilized.While fish and shellfish are perhaps the most obvious sources ofsuch proteins and peptides, there is also the potential for furtherdevelopment of proteins and peptides from sources like algae, seacucumber and molluscs. Marine-derived proteins and peptides alsohave potential uses in novel products, with the possibility of widecommercialization in the food, beverage, pharmaceutical andcosmetic industries, as well as in other fields such asphotography, textiles, leather, electronics, medicine andbiotechnology. Marine Proteins and Peptides: Biological Activities andApplications presents an overview of the current status,future industrial perspectives and commercial trends of bioactivemarine-derived proteins and peptides. Many of the industrialperspectives are drawn from the food industry, but the book alsorefers to the pharmaceutical and cosmetics industries. There haverecently been significant advances in isolating functionalingredients from marine bio-resources and seafood by-products foruse in these industries, but little has been published, creating aknowledge gap, particularly with regard to the isolation andpurification processes. This book is the first to fill thatgap. Marine Proteins and Peptides: Biological Activities andApplications is a valuable resource for researchers inmarine biochemistry field as well as food industry managersinterested in exploring novel techniques and knowledge onalternative food protein sources. It will become a standardreference book for researchers involved in developing marinebio-resources and seafood by-products for novel nutraceutical,cosmetics, and pharmaceutical applications. It will also appeal tomanagers and product developers in the food, pharmaceutical andcosmetics industries, particularly those looking to usemarine-derived proteins and peptides as substitutes or replacementsfor unfashionable or outdated food components.

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 Nutraceuticals 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. This book covers various processes involved in incorporating flavor and improving product acceptability. It provides an overview on the potential applications of the main terpene based flavors as part of nutraceuticals formulations. This book will serve as a reference to academicians and industry people who are involved in Nutraceutical formulations and marketing.

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, peptidomics, 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.

This volume examines the chemical and biological quality management of nutraceuticals. The volume is divided into three sections: reviews of nutraceutical compounds, examples of the chemical analysis of nutraceutical products currently on the market, and the bioactivity of several nutraceutical products such as ginger and gum guggul

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 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.

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.

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 nutracueticals 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

"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.

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, thallassotherapy, and forensic medicine.

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.

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 with an interest in algae and those in the algaculture, 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

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.

In recent years, the concern of society about how food influences the health status of people has increased. Consumers are increasingly aware that food can prevent the development of certain diseases, so in recent years, the food industry is developing new, healthier products taking into account aspects such as trans fats, lower caloric intake, less salt, etc. However, there are bioactive compounds that can improve the beneficial effect of these foods and go beyond the nutritional value. This book provides information on impact of bioactive ingredients (vitamins, antioxidants, compounds of the pulses, etc.) on nutrition through food, how functional foods can prevent disease, and tools to evaluate the effects of bioactive ingredients, functional foods, and diet.

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.

The complex world of polysaccharides is a compilation of the characteristics of a variety of polysaccharides from plants, animals and microorganisms. The diversity of these polysaccharides arises from the structural variations and the monosaccharide content which is under genetic control. The chemical and physical properties have made them useful in many pharmaceutical, food and industrial applications. These properties of the polysaccharides determine their biological activity and their function in various applications. The role played by polysaccharides in preservation and protection of food, as carriers of nutrients and drugs, their ability to interact with molecules both for efficient delivery as well as improving textures of food colloids and their use as therapeutics are some of the functions discussed.

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 nutritonists..

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 marine sources and techniques for extracting and purifying these chemicals is advancing. More than just a review of the science and market base available for the development of marine nutraceutical/functional food, this book provides a greater understanding of how consumer attitude and legal concerns will impact the kind of products that can be made. 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 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.

This fully revised and updated edition begins with insights into the scope, importance and continuing growth opportunities in the nutraceutical and functional food industries and explores the latest regulatory changes and their impacts. The book demonstrates the global scenario of the acceptance and demand for these products and explores the regulatory hurdles and claim substantiation of these foods and dietary supplements, as well as addressing the intricate aspects of manufacturing procedures. As the public gains confidence in the quality of these products based on sophisticated quality control, a broad spectrum of safety studies and GRAS, peer-reviewed publications and cutting-edge human clinical studies have emerged. An increasing number of additional populations around-the-world now recognize the efficacy and functions of nutraceuticals and functional foods as established by those scientific research studies. As a result, a number of structurally and functionally active novel nutraceuticals and several new functional beverages have been introduced into the marketplace around the world. Features fully revised and updated information with current regulations from around the world, including GRAS status and DSHEA regulators Offers 45% new content including three new chapters –NSF: Ensuring the Public Health and Safety Aspects of Nutraceuticals and Functional Foods; Role of the United States Pharmacoepia in the Establishment of Nutraceuticals and Functional Food Safety; An Overview on the New Dietary Ingredient (NDI) and Generally Recognized as Safe (GRAS) Status, and the addition of cGMP regulations for dietary supplements Includes insight into working with regulatory agencies, processes and procedures Provides a link to the contact information for most regulatory bodies for readers wishing to gain further knowledge

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.

According to an August 2009 report from PricewaterhouseCoopers, the United States market for functional foods in 2007 was US$ 27 billion. Forecasts of growth range from between 8.5% and 20% per year, or about four times that of the food industry in general. Global demand by 2013 is expected to be about $100 billion. With this demand for new products comes a demand for product development and supporting literature for that purpose. There is a wealth of research and development in this area and great scope for commercialization, and this book provides a much-needed review of important opportunities for new products, written by authors with in-depth knowledge of as yet unfulfilled health-related needs. This book addresses functional food product development from a number of perspectives: the process itself; health research that may provide opportunities; idea creation; regulation; and processes and ingredients. It also features case studies that illustrate real product development and commercialization histories. Written for food scientists and technologists, this book presents practical information for use in functional food product development. It is an essential resource for practitioners in functional food companies and food technology

centres and is also of interest to researchers and students of food science. Key features: A comprehensive review of the latest opportunities in this commercially important sector of the food industry Includes chapters highlighting functional food opportunities for specific health issues such as obesity, immunity, brain health, heart disease and the development of children. New technologies of relevance to functional foods are also addressed, such as emulsion delivery systems and nanoencapsulation. Includes chapters on product design and the use of functional ingredients such as antioxidants, probiotics and prebiotics as well as functional ingredients from plant and dairy sources Specific examples of taking products to market are provided in the form of case studies e.g. microalgae functional ingredients Part of the Functional Food Science and Technology book series (Series Editor: Fereidoon Shahidi)
"Functional food or medicinal food is any fresh or processed food claimed to have a health-promoting and/or disease-preventing property beyond the basic nutritional function of supplying nutrients, although there is no consensus on an exact definition of the term. This is an emerging field in food science, in which such foods are usually accompanied by health claims for marketing purposes, such as a company's ‘cereal is a significant source of fiber. Studies have shown that an increased amount of fiber in one's diet can decrease the risk of certain types of cancer in individuals.’ Functional foods are sometimes called nutraceuticals, a portmanteau of nutrition and pharmaceutical, and can include food that has been genetically modified. The general category includes processed food made from functional food ingredients, or fortified with health-promoting additives, like "vitamin-enriched" products, and also fresh foods (e.g., vegetables) that have specific claims attached. Fermented foods with live cultures are often also considered to be functional foods with probiotic benefits."
Copyright: 0016407e08185b1f451974bd80945a45