Awards Agricultural And Food Chemistry Division

Animals are biological transformers of dietary matter and energy to produce high-quality foods and wools for human consumption and use. Mammals, birds, fish, and shrimp require nutrients to survive, grow, develop, and reproduce. As an interesting, dynamic, and challenging discipline in biological sciences, animal nutrition spans an immense range from chemistry, biochemistry, anatomy and physiology to reproduction, immunology, pathology, and cell biology. Thus, nutrition is a foundational subject in livestock, poultry and fish production, as well as the rearing and health of companion animals. This book entitled Principles of Animal Nutrition consists of 13 chapters. Recent advances in biochemistry, physiology and anatomy provide the foundation to understand how nutrients are utilized by ruminants and non-ruminants. The text begins with an overview of the physiological and biochemical bases of animal nutrition, followed by a detailed description of chemical properties of carbohydrates, lipids, protein, and amino acids. It advances to the coverage of the digestion, absorption, transport, and metabolism of macronutrients, energy, vitamins, and minerals in animals. To integrate the basic knowledge of nutrition with practical animal feeding, the book continues with discussion on nutritional requirements of animals for maintenance and production, as well as the regulation of food intake by animals. Finally, the book closes with feed additives, including those used to enhance animal growth and survival, improve feed efficiency for protein production, and replace feed antibiotics. While the classical and modern concepts of animal nutrition are emphasized throughout the book, every effort has been made to include the most recent progress in this ever-expanding field, so that readers in various biological disciplines can integrate biochemistry and physiology with nutrition, health, and disease in mammals, birds, and other animal species (e.g., fish and shrimp). All chapters clearly provide the essential literature related to the principles of animal nutrition, which should be useful for academic researchers, practitioners, beginners, and government policy makers. This book is an excellent reference for professionals and a comprehensive textbook for senior undergraduate and graduate students in animal science, biochemistry, biomedicine, biology, food science, nutrition, veterinary medicine, and related fields.

The consumption of functional foods has emerged as a major consumer-driven trend, based on the needs of an ever-growing health conscious population that wants to exercise greater control over its health. Focusing on an important sector of this rapidly growing field, Asian Functional Foods discusses the theoretical and practical aspects of functional foods found in the traditional Asian diet, from fundamental concepts of biochemistry, nutrition, and physiology to food science and technology. The book covers a wide range of topics, beginning with an introduction to the source, history, functionality, and chemical, physical, and physiological properties of traditional Asian functional foods, followed by the health benefits, mechanisms of antioxidant action, anticancer and antiaging properties, supported by clinical and epidemiological evidence. The chapter authors discuss processing technology and process systems, equipment, material preparation, food preparation, and quality control during processing. They explore stability, shelf life, and storage criteria for traditional functional food products, industrial production, home-made products, consumer and marketing issues, and social and economical impact. As Asian functional foods continue to gain popularity worldwide, a solid understanding of these functional foods will help food scientists take advantage of them to better maintain and promote health. Examining the scientific and social issues impacting their development, this book provides that understanding.

Lipid oxidation in food systems is one of the most important factors which affect food quality, nutrition, safety, color and consumers' acceptance. The control of lipid oxidation remains an ongoing challenge as most foods constitute very complex matrices. Lipids are mostly incorporated as emulsions, and chemical reactions occur at various interfaces throughout the food matrix. Recently, incorporation of healthy lipids into food systems to deliver the desired nutrients is becoming more popular in the food industry. Many food ingredients contain a vast array of components, many of them unknown or constituting diverse or undefined molecular structures making the need in the food industry to develop effective approaches to mitigate lipid oxidation in food systems. This book provides recent perspectives aimed at a better understanding of lipid oxidation mechanisms and strategies to improve the oxidative stability of food systems. Five chapters on naturally-derived antioxidants that focus on applications within food systems Contributors include an international group of leading researchers from academic, industrial, and governmental entities Discusses the oxidative stability of enzymatically produced oils and fats Provides overviews on the complexities of lipid oxidation mechanisms, and emulsion systems most suseptible to rapid lipid oxidation

Food may be nutritious, visually appealing and easy to prepare but if it does not possess desirable flavors, it will not be consumed. Food Flavors and Chemistry: Advances of the New Millennium primarily focuses on food flavors and their use in foods. Coverage also includes other important topics in food chemistry and production such as analytical methods, packaging, storage, safety and patents. Positive flavor notes are described, including ways of enhancing them in food. Conversely, methods for eliminating and reducing undesirable flavors are also proposed. Packaging aspects of foods, with respect to controlling sensory attributes, appearance and microbiological safety are discussed in detail. There is also a section concentrating on the most recent developments in dairy flavor chemistry. This book will be an important read for all postgraduate students, academics and industrial researchers wanting to keep abreast of food flavors and their chemistry.

Modified Nucleosides in Cancer and Normal Metabolism - Methods and Applications

A comprehensive examination of the chemistry of food toxicants produced during processing, formulation, and storage of food, Food Safety Chemistry: Toxicant Occurrence, Analysis and Mitigation provides the information you need to develop practical approaches to control and reduce contaminant levels in food products and food ingredients, including cooking oils. It discusses each major food chemical contaminant, examining toxic effects and the biological mechanisms behind their toxicity. The book supplies an

understanding of the chemical and biochemical mechanisms involved in the formation of certain food contaminants through a systematic review of the appearances of these foodborne chemical toxins as well as the chemical and biochemical mechanisms involved in their formations during food processing and storage. It also details their absorption and distribution profiles and the factors influencing their levels in foods. It includes updated analytical techniques for food quality control, other research efforts on these chemicals, and their regulatory-related concerns and suggestions. Edited by experts in the field, this guide includes a listing of commonly used analytical techniques in food safety and a summary of current research findings related to food chemical contaminants. The book's updated information on potential adverse effects on human health and focus on analytical techniques for food safety analysis and quality control makes it a reference that will spend more time in your hands than on your bookshelf.

Dairy Science includes the study of milk and milk-derived food products, examining the biological, chemical, physical, and microbiological aspects of milk itself as well as the technological (processing) aspects of the transformation of milk into its various consumer products, including beverages, fermented products, concentrated and dried products, butter and ice cream. This new edition includes information on the possible impact of genetic modification of dairy animals, safety concerns of raw milk and raw milk products, peptides in milk, dairy-based allergies, packaging and shelf-life and other topics of importance and interest to those in dairy research and industry. Fully reviewed, revised and updated with the latest developments in Dairy Science Full color inserts in each volume illustrate key concepts Extended index for easily locating information

The past decade has seen considerable interest and progress in unraveling the beneficial health effects of tea, particularly its polyphenolic components and its antioxidant activity. Understanding the science behind the claims will help in the production and marketing of teas and tea products. Pulling together recent research and presenting it in an organized format, Tea and Tea Products discusses the manufacturing and chemistry of various teas including green, black, Pu-erh, white, and GABA teas. Emphasizing black and green teas equally, the book presents comprehensive and up-to-date reviews and perspectives on the chemistry of tea components and the molecular biology of green tea catechins and black tea theaflavins. It covers the analysis, formation mechanisms, and bioavailability of tea polyphenols and discusses bioactivities of teas including anticancer, anti-inflammatory, anti-obesity, and anti diabetes. Increased awareness of the many health benefits of tea has fueled an increase in the market for ready to drink teas and tea products in general that will continue to grow. This expanding market requires a resource that provides the evidence. The editors of this volume have more than 100 research publications in tea, and experience in editing more than 50 books between them. Under their expertise and editorial guidance, the contributors present chapters that explore the science behind the health claims of teas.

Leading researchers discuss the past and present of chromatography More than one hundred years after Mikhail Tswett pioneered adsorption chromatography, his separation technique has developed into an important branch of scientific study. Providing a full portrait of the discipline, Chromatography: A Science of Discovery bridges the gap between early, twentieth-century chromatography and the cutting edge of today's research. Featuring contributions from more than fifty award-winning chromatographers, Chromatography offers a multifaceted look at the development and maturation of this field into its current state, as well as its importance across various scientific endeavors. The coverage includes: Consideration of chromatography as a unified science rather than just a separation method Key breakthroughs, revolutions, and paradigm shifts in chromatography Profiles of Nobel laureates who used chromatography in their research, and the role it played Recent advances in column technology Chromatography's contributions to the agricultural, space, biological/medical sciences; pharmaceutical science; and environmental, natural products, and chemical analysis Future trends in chromatography With numerous references and an engaging series of voices, Chromatography: A Science of Discovery offers a diverse look at an essential area of science. It is a unique and invaluable resource for researchers, students, and other interested readers who seek a broader understanding of this field.

New Scientist magazine was launched in 1956 "for all those men and women who are interested in scientific discovery, and in its industrial, commercial and social consequences". The brand's mission is no different today - for its consumers, New Scientist reports, explores and interprets the results of human endeavour set in the context of society and culture.

Advances in Food Research, the leading publication for comprehensive reviews on important topics in food science, has evolved into Advances in Food and Nutrition Research under the editorial direction ofJohn E. Kinsella. This expanded title recognizes the integral relationships between food science and nutrition and presents reviews of topics in nutrition as well as food science. This change also encourages nutritionists and food scientists to become more familiar with relevant advances in these interrelated areas

Health and healing foods have a long history in the Asian cultures. Those of Eastern culture have long believed that food and medicine are from the same source and can treat illnesses and promote a healthier life. This volume covers certain traditional Asian functional foods, their history, functionality, health benefits, physiological properties, mechanisms of anti-cancer and anti-aging action. In addition, it covers processing technology, storage, material sources, marketing, social, and economical aspects. Expanding on geographical areas covered in previous works, the authors consider foods that originate from all over upper and lower Asian as well as the Middle East.

Biologically Active Peptides: From Basic Science to Applications for Human Health stands as a comprehensive resource on bioactive peptide science and applications. With contributions from more than thirty global experts, topics discussed include bioactive peptide science, structure-activity relationships, best practices for their study and production, and their applications. In the interdisciplinary field of bioactive peptides, this book bridges the gap between basic peptide chemistry and human physiology, while reviewing recent advances in peptide analysis and characterization. Methods and technology-driven chapters offer step-by-step guidance in peptide preparation from different source materials,

bioactivity assays, analysis and identification of bioactive peptides, encoding bioactive peptides. Later, applications across disease areas and medical specialties are examined in-depth, including the use of bioactive peptides in treating obesity, diabetes, osteoporosis, mental health disorders, food allergies, and joint health, among other disorders, as well as bioactive peptides for sensory enhancement, sports and clinical nutrition, lowering cholesterol, improving cardiovascular health, and driving advances in biotechnology. Discusses the latest advances in bioactive peptide chemistry, functionality and analysis Offers step-by-step instruction in applying new technologies for peptide extraction, protection, production and encoding, as well as employing bioactive peptide sequencing and bioactivity assays in new research Effectively links basic peptide chemistry, human biology and disease Features chapter contributions from international experts across disciplines and applications

Traditionally perceived as a high-fat, high-calorie food best avoided or consumed only in moderation, tree nuts have come into their own. Recent epidemiological and clinical studies provide evidence that frequent nut consumption is associated with favorable plasma lipid profiles, reduced risk of coronary heart disease, certain types of cancer, stroke, atherosclerosis, type-2 diabetes, inflammation, and several other chronic diseases. Drawing on contributions from experts based in industry and academia Tree Nuts: Composition, Phytochemicals, and Health discusses the results of state-of-the-art research on different aspects of tree nut compositions, phytochemicals, and their health effects. Explore New Research on Health Effects of Tree Nuts The book examines popular tree nuts, together with chestnut and heart nut, and describes each one’s compositional and lipid characteristics, phytochemicals, and health effects. It also briefly examines the chemical composition of acorn nut, beech nut, coconut, and hickory. The volume provides a comprehensive assessment of allergens and anti-aflatoxigenic activity of phytochemicals, and sphingolipids and health benefits of tree nuts as well as their flavor and volatile compounds. The contributors include coverage of the bioactives and phytochemicals of tree nut by-productswhen the information is available. Complete, Comprehensive, and Up-to-Date Coverage With its distinguished, international panel of contributors and expert editorial guidance, this book provides coverage that is both comprehensive and authoritative. The information presented is an excellent starting point for further research into the uses, processing, and marketing of tree nuts and tree nut by-products.

John E. Kinsella, Dean ofthe College of Agricultural and Environmental Sciences at the University of California-Davis, passed away on May 2, 1993, at the age of 55. In August 1995, fonner students and post-doctoral fellows of Dr. Kinsella met at the American Chemical Society National Meeting in Chicago to convene a Symposium on Food Proteins and Lipids to honor Dr. Kinsella's enonnous contribution to the field of food science and nutrition. This book is a collection of papers presented at that symposium. A native of Ireland, Dr. Kinsella received his bachelor's degree in agricultural sciences in 1961 from the University of Dublin. He received his master's degree in biology in 1965 and a doctorate in food chemistry in 1967 from Pennsylvania State University. He joined the Food Science faculty at Cornell University in 1967. While at Cornell, he served as Chair of the Department of Food Science from 1977-1985 and Director of the Institute of Food Science from 1980-1987. He was designated Liberty Hyde Bailey Professor of Food Biochemistry in 1981, a Fulbright Fellow in 1983, and was selected as the General Foods Distinguished Professor of Food Science in 1984. He was named a Leading Professor in the State University of New York, the highest professorial honor in the SUNY system. In 1990 he joined the University of California at Davis as Dean of the College of Agricultural and Environmental Sciences. Dr.

Fennema's Food ChemistryCRC Press

June 29-July 01, 2017 Madrid, Spain Key Topics : Clinical Nutrition, Sports Nutrition & Kinesiology, Plant Nutrition, Animal and Diary Nutrition, Malnutrition or Nutritional Deficiency, Nutrient related Chronic diseases, Nutrition and Cancer, Nutrition in Pregnancy and Lactation, Paediatric Nutrition, Nutrition During Adolescence, Diet in Obesity and Underweight, Diet for Gastrointestinal Diseases, Nutrition and Psychology, Nutrition, Health and Choice, Current Research in Nutrition and Dietetics, Food and Nutrition, Nutritional Epidemiology, Food Science & Chemistry, Public Health Research, Diet & Appetite, Vitaminology & Lipidology, Nutritional Neuroscience & Eating Disorders, Renal Nutrition & Metabolism, Nutraceuticals & Medicinal Foods, Holistic & Integrative Nutrition, Food & Nutritional Immunology, Food & Nutritional Toxicology, Food & Nutritional Metabolomics, Protein Science, Behavioral Nutrition & Physical Activity,

John C. Walker -- George F. Sprague -- Sir Kenneth Blaxter -- Jay L. Lush -- Karl Maramorosch -- John O. Almquist -- Henry A. Lardy -- Glenn Wade Salisbury -- Wendell L. Roelofs -- Cornelis T. De Wit -- Don Kirkham -- Robert H. Burris -- Sir Ralph Riley, F.R.S. -- Ernest R. Sears -- Theodor O. Diener -- Ernest John Christopher Polge -- Charles Thibault -- Peter M. Biggs -- Michael Elliott -- Jozef Stefaan Schell -- Shang Fa Yang -- John E. Casida -- Perry L. Adkisson -- Carl B. Huffaker -- Morris Schnitzer -- Frank J. Stevenson -- Neal L. First -- Ilan Chet -- Baldur Rosmund Stefansson -- Gurdev S. Khush -- Roger N. Beachy -- James E. Womack -- Fuller W. Bazer -- R. Michael Roberts -- Steven D. Tanksley -- Longping Yuan -- Michel A.J. Georges -- Ronald L. Phillips -- John Anthony Pickett, CBE, DSc, FRS -- James H. Tumlinson -- W. Joe Lewis

Dairy foods account for a large portion of the Western diet, but due to the potential diversity of their sources, this food group often poses a challenge for food scientists and their research efforts. Bringing together the foremost minds in dairy research, Handbook of Dairy Foods Analysis, Second Edition, compiles the top dairy analysis techniques and methodologies from around the world into one well-organized volume. Exceptionally comprehensive in both its detailing of methods and the range of dairy products covered, this handbook includes tools for analyzing chemical and biochemical compounds and also bioactive peptides, prebiotics, and probiotics. It describes noninvasive chemical and physical sensors and starter cultures used in quality control. This second edition includes four brand-new chapters covering the analytical techniques and methodologies for determining bioactive peptides, preservatives, activity of endogenous enzymes, and sensory perception of dairy foods, and all other chapters have been adapted to recent

research. All other chapters have been thoroughly updated. Key Features: Explains analytical tools available for the analysis of the chemistry and biochemistry of dairy foods Covers a variety of dairy foods including milk, cheese, butter, yogurt, and ice cream Analysis of nutritional quality includes prebiotics, probiotics, essential amino acids, bioactive peptides, and healthy vegetable-origin compounds Includes a series of chapters on analyzing sensory qualities, including color, texture, and flavor. Covering the gamut of dairy analysis techniques, the book discusses current methods for the analysis of chemical and nutritional compounds, and the detection of microorganisms, allergens, contaminants, and/or other adulterations, including those of environmental origin or introduced during processing. Other methodologies used to evaluate color, texture, and flavor are also discussed. Written by an international panel of distinguished contributors under the editorial guidance of renowned authorities, Fidel Toldrá and Leo M.L. Nollet, this handbook is one of the few references that is completely devoted to dairy food analysis – an extremely valuable reference for those in the dairy research, processing, and manufacturing industries.

The name "Allium" is said to come from the Greek word to avoid because of its offensive smell. The genus Allium includes more than 800 species of which only a few have been cultivated as foods. Many of the other members of this genus are popular with gardeners as easy to maintain perennials, although the smell of some members of the genus can be off-putting. The smell is a consequence of breakdown of sulfur-containing compounds which is a characteristic of this family of plants. Garlic, onions, leeks, chives and other members of the genus Allium occupy a unique position both as edible plants and herbal medicines, appreciated since the dawn of civilization. Alliums have been featured through the ages in literature, where they are both praised and reviled, as well as in architecture and the decorative arts. Garlic pills are top-selling herbal supplements while garlic-based products show considerable promise as environmentally friendly pesticides. The remarkable properties of the alliums can be understood based on the occurrence of a number of relatively simple sulfur-containing chemical compounds ingeniously packaged by nature in these plants. This unique book, with a foreword by 1990 Nobel Laureate E.J. Corey, outlines the extensive history and the fascinating past and present uses of these plants, sorting out fact from fiction based upon detailed scrutiny of historic documents as well as numerous laboratories studies. Readers will be entertained and educated as they learn about early cultivation of garlic and other alliums while being introduced to the chemistry and biochemistry. They will learn how alliums have been portrayed and used in literature, poetry, the arts and how alliums are featured in the world's oldest cookbook. Technical material is presented in a manner understandable to a general audience, particularly through the use of illustrations to simplify more difficult concepts and explain how experimental work is conducted. The book is heavily illustrated with examples of alliums in art, literature, agriculture, medicine and other areas and includes rare botanical drawings of many members of the genus Allium. Essential reading for anyone with a general interest in science, the book is written at a level accessible to experts and non-experts alike. It has sufficient additional detail and references to satisfy both those wanting to know more, as well as researchers in disciplines as diverse as archaeology, medicine, ecology, pharmacology, food and plant sciences, agriculture, and organic chemistry.

This book unlocks mysteries surrounding university presidents. Presidents have a large and growing influence on world and academic affairs. Yet until now, little has been revealed about how they enact their roles, how they capture motivation and academic energy, and their views on higher education. This book sheds light on these critical topics, revealing insights from in-depth interviews with presidents of nineteen globally focused universities from thirteen countries. The book presents the interview transcripts and surrounds these with interpretative commentary. Underpinned by leadership theory and framed by analysis, the book provides glimpses into how top leaders think, how presidents manoeuvre through their careers, how leaders form and run productive teams, and opportunities for research and innovation. Common themes and challenges are identified. The presidents reflect on university landscapes, strategic outlooks, the formation of executive teams, online teaching, funding, industry engagement, sustainability, grand challenges, and interdisciplinarity. This book is for professionals and scholars who are interested in education, universities, public policy, science and humanities, and global affairs.

July 23-24, 2018 Rome, Italy Key Topics : Agricultural And Food Chemistry, Agricultural Chemical Science And Engineering, Agronomy, Agricultural And Food Biotechnology And Nanotechnology, Food Bioactives, Nutrition And Health, Food Chemistry, Food Engineering, Food Processing, Food Safety, Food Science And Technology, Food Packaging, Agricultural And Food Industry, Quality Analysis And Detection Technology In Agricultural And Food Materials, Market Standards And Regulations In Agricultural & Food Chemistry, Aquaculture, Fisheries, Veterinary Science, ,

A much-anticipated revision of a benchmark resource, written by a renowned author, professor, and researcher in food flavors, Flavor Chemistry and Technology, Second Edition provides the latest information and newest research developments that have taken place in the field over the past 20 years. New or expanded coverage includes:Flavor and the Inf

StarGuides Plus represents the most comprehensive and accurately validated collection of practical data on organizations involved in astronomy, related space sciences and other related fields. This invaluable reference source (and its companion volume, StarBriefs Plus) should be on the reference shelf of every library, organization or individual with any interest in these areas. The coverage includes relevant universities, scientific committees, institutions, associations, societies, agencies, companies, bibliographic services, data centers, museums, dealers, distributors, funding organizations, journals, manufacturers, meteorological services, national norms & standard institutes, parent associations & societies, publishers, software producers & distributors, and so on. Besides astronomy and associated space sciences, related fields such as aeronautics, aeronomy,

astronautics, atmospheric sciences, chemistry, communications, computer sciences, data processing, education, electronics, engineering, energetics, environment, geodesy, geophysics, information handling, management, mathematics, meteorology, optics, physics, remote sensing, and so on, are also covered where appropriate. After some thirty years in continuous compilation, verification and updating, StarGuides Plus currently gathers together some 6,000 entries from 100 countries. The information is presented in a clear, uncluttered manner for direct and easy use.

Advances in Food and Nutrition Research, Volume 82, provides updated knowledge about nutrients in foods and how to avoid their deficiency, especially for those essential nutrients that should be present in the diet to reduce disease risk and optimize health. The series provides the latest advances on the identification and characterization of emerging bioactive compounds with putative health benefits, as well as up-to-date information on food science, including raw materials, production, processing, distribution and consumption, with an emphasis on nutritional benefits and health effects. Features input from contributors who have been carefully selected based on their long experience and high expertise on the subject Provides an updated and in-depth critical discussion of the latest knowledge about nutrients in foods and how to avoid their deficiency Provides the latest advances on the identification and characterization of emerging bioactive compounds with putative health benefit Offers up-to-date information on food science, including raw materials, production, processing, distribution and consumption, with an emphasis on nutritional benefits and health effects

Advances in Sulfur Chemistry, Volume 1 provides information pertinent to the four key aspects of sulfur chemistry. This book illustrates the great utility of sulfur in organic synthesis as applied to the synthesis of cyclic compounds, most of which serve as intermediates in the total synthesis of natural products. Organized into five chapters, this volume begins with an overview of desulfurization using Raney nickel. This text then highlights the extensive research done on compounds containing both phosphorus and sulfur attached to the same carbon atom, revealing synergism involving these adjacent second row heteroatoms. Other chapters consider the significant class of thiaheterocycles and include a discussion of the chemistry of disulfur. The final chapter deals with the chemistry of metal complexes of thiols, with focus on the chemistry, structure, and chemical modeling of the nitrogenase enzyme system, whereby dinitrogen is ultimately reduced to ammonia. This book is a valuable resource for graduate students, postdoctoral fellows, industrial chemists, and those teaching specialized topics to graduate students.

Completely revised, this new edition updates the chemical and physical properties of major food components including water, carbohydrates, proteins, lipids, minerals vitamins and enzymes. Chapters on color, flavor and texture help the student understand key factors in the visual and organoleptic aspects of food. The chapter on contaminants and additives provides an updated view of their importance in food safety. Revised chapters on beer and wine production, and herbs and spices, provide the student with an understanding of the chemistry associated with these two areas which are growing rapidly in consumer interest. New to this edition is a chapter on the basics of GMOs. Each chapter contains new tables and illustrations, and an extensive bibliography, providing readers with ready access to relevant literature and links to the internet where appropriate. Just like its widely used predecessors, this new edition is valuable as a textbook and reference.

Marine Enzymes Biotechnology: Production and Industrial Applications, Part II - Marine Organisms Producing Enzymes provides a huge treasure trove of information on marine organisms. Nowadays, marine organisms are good candidates for enzymes production and have been recognized as a rich source of biological molecules that are of potential interest to various industries. Marine enzymes such as amylases, carboxymethylcellulases, proteases, chitinases, keratinases, xylanases, agarases, lipases, peroxidase and tyrosinases are widely used in the industry for the manufacture of pharmaceuticals, foods, beverages, and confectioneries, as well as in textile and leather processing, and in waste water treatment. The majority of the enzymes used in the industry are of microbial origin because microbial enzymes are relatively more stable than the corresponding enzymes derived from plants and animals. Focuses on the isolation, characterization, and industrial application of marine enzymes Provides current trends and development of industrial important marine enzymes, including amylases, carboxymethylcellulases, proteases, chitinases, keratinases, xylanases, agarases, lipases, peroxidase, and tyrosinases Presents insights into current trends and approaches for marine enzymes

Analytical Methods for Major and Modified Nucleosides - HPLC, GC, MS, NMR, UV and FT-IR

Following its predecessor, the second edition of Amino Acids: Biochemistry and Nutrition presents exhaustive coverage of amino acids in the nutrition, metabolism and health of humans and other animals. Substantially revised, expanded and updated to reflect scientific advances, this book introduces the basic principles of amino acid biochemistry and nutrition, while highlighting the current knowledge of the field and its future possibilities. The book begins with the basic chemical concepts of amnio acids, peptides and proteins, and their digestion and absorption. Subsequent chapters cover cell-, tissue-, and species-specific synthesis and catabolism of amino acids and related bioactive metabolites, and the use of isotopes to study amino acids metabolism in cells and the body. The book details protein turnover, physiological functions of amino acids, as well as both the regulation and inborn errors of amino acid metabolism. The book concludes with a presentation on human and animal dietary requirements of amino acids and evaluates dietary protein quality. Features: Encompasses a comprehensive coverage of basic to applied concepts in amino acid metabolism in humans and other animals. Highlights important roles of dietary amino acids and protein intake in growth, physical performance and health, including sarcopenia mitigation and immunity. Discusses concerns over the excess intakes of amino acids or protein in the development of diseases, including cardiovascular disorders, diabetes and cancers, as well as bone integrity Each chapter contains select references to provide comprehensive reviews and original experimental data on the topics discussed. Each chapter is backed by original experimental data on various topics discussed and contains select references to aid the reader further in research. Written by Distinguished Professor of Animal Nutrition, Guoyao Wu, Ph.D., this book is an authoritative reference for students and researchers in both biomedicine and agriculture.

This latest edition of the most internationally respected reference in food chemistry for more than 30 years, Fennema’s Food Chemistry, 5th Edition once again meets and surpasses the standards of quality and comprehensive information set by its predecessors. All chapters reflect recent scientific advances and, where appropriate, have expanded and evolved their focus to provide readers with the current state-of-the-science of chemistry for the food industry. This edition introduces new editors and contributors who are recognized experts in their fields. The fifth edition presents a completely rewritten chapter on Water and Ice, written in an easy-to-understand manner suitable for professionals as well as undergraduates. In addition, ten former chapters have been completely revised and updated, two of which receive extensive attention in the new edition including Carbohydrates (Chapter 3), which has been expanded to include a section on Maillard reaction; and Dispersed Systems: Basic considerations (Chapter 7), which includes thermodynamic incompatibility/phase separation concepts. Retaining the straightforward organization and accessibility of the original, this edition begins with an examination of major food components such as water, carbohydrates, lipids, proteins, and enzymes. The second section looks at minor food components including vitamins and minerals, colorants, flavors, and additives. The final section considers food systems by reviewing basic considerations as well as specific information on the characteristics of milk, the postmortem physiology of edible muscle, and postharvest physiology of plant tissues.

Reports of the beneficial health effects of some peptides have begun to make their way into the scientific literature. Peptides can act as immunomodulators, and have been shown to have a positive influence on calcium absorption, and on regulation of serum cholesterol. A number of peptides may also possess antimicrobial properties that enhance the body's defense mechanisms, and others may produce inhibitory effects for angiotensin-I-converting enzyme (ACE), leading to novel treatments for blood pressure conditions, heart failure, and diabetes. Modern food biotechnology may also allow for the production of highly important products for those suffering life-altering food allergies. A compendium of cutting-edge information for research scientists and clinicians Nutraceutical Proteins and Peptides in Health and Disease is the first book that provides comprehensive discussions on bioactive proteins and peptides in the area of nutraceutical and functional foods. It looks at protein and peptide impact on the body's absorption, defense, regulating, and nervous systems, then delves into hypo-allergenic foods and modern approaches to nutraceutical research and production. With 32 chapters written by 63 scientists working at the frontier of this revolutionizing field, it includes state-of-the-art information on-- The cholesterol-lowering capabilities of proteins and peptides Opioid-like peptides The antibodies found in milk and egg yolks Enzymes derived from traditional Asian fermented foods found useful in novel thrombolytic therapy ACE-inhibitory peptides Enzymatic treatments used to create anti-allergenic food Recent developments in proteomics that are making certain processes economically feasible, including those employed in the binding of bioactive peptides Nutraceutical Proteins and Peptides in Health and Disease provides a compendium of cutting-edge information that can be put to direct use in research, therapy, and production. Biochemists, nutritional scientists, food scientists, and health professionals, as well as graduate students in these fields, will find this book highly useful.

The world's most comprehensive, well documented, and well illustrated book on this subject. With extensive subject and geographical index. 76 photographs and illustrations - mostly color. Free of charge in digital format on Google Books.

As essential nutrients, sodium and potassium contribute to the fundamentals of physiology and pathology of human health and disease. In clinical settings, these are two important blood electrolytes, are frequently measured and influence care decisions. Yet, blood electrolyte concentrations are usually not influenced by dietary intake, as kidney and hormone systems carefully regulate blood values. Over the years, increasing evidence suggests that sodium and potassium intake patterns of children and adults influence long-term population health mostly through complex relationships among dietary intake, blood pressure and cardiovascular health. The public health importance of understanding these relationships, based upon the best available evidence and establishing recommendations to support the development of population clinical practice guidelines and medical care of patients is clear. This report reviews evidence on the relationship between sodium and potassium intakes and indicators of adequacy, toxicity, and chronic disease. It updates the Dietary Reference Intakes (DRIs) using an expanded DRI model that includes consideration of chronic disease endpoints, and outlines research gaps to address the uncertainties identified in the process of deriving the reference values and evaluating public health implications.