

Bioqu Ica S Ptima E

This text provides a practical guide providing step-by-step protocol to design and develop vaccines. Chapters detail protocols for developing novel vaccines against infectious bacteria, viruses, fungi, and parasites for humans and animals. Volume 2: Vaccines for Veterinary Diseases includes vaccines for farm animals and fishes, vaccine vectors and production, vaccine delivery systems, vaccine bioinformatics, vaccine regulation and intellectual property. Written for the Methods in Molecular Biology series, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, Vaccine Design: Methods and Protocols, Volume 2: Vaccines for Veterinary Diseases aims to ensure successful results in the further study of this vital field.

This introductory text has been revised to reflect the changing dynamics of introductory biology. Emphasizing concepts over facts, it presents the dynamic processes at work in biology.

Increasing interest in marine biology and its relevance to environmental issues creates a demand for authoritative reviews of recent research. Oceanography and Marine Biology has addressed this demand for nearly 40 years. This annual review considers basics of marine research, special topics, and emerging new areas. Regarding the marine sciences as a unified field, the text features contributors who are actively engaged in biological, chemical, geological, and physical aspects of marine science. This edition includes a full color insert and covers such topics as the ecological status of the Great Barrier Reef, the effects of coral bleaching on fisheries, and the biology of octopus larvae.

The dynamic and expanding knowledge of environmental stresses and their effects on plants and crops have resulted in the compilation of a large volume of information in the last ten years since the publication of the second edition of the Handbook of Plant and Crop Stress. With 90 percent new material and a new organization that reflects this incre

Life on Earth
Biology

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Biotechnological Applications of Plant Proteolytic Enzymes
Food Safety Culture

This third edition of Medical Microbiology provides a concise, up-to-date, and clinically relevant introduction to microbiology. This innovative text focuses on those microbes that cause disease in humans and follows a taxonomic approach. Special emphasis is placed on important, medically relevant information. Each chapter of Medical Microbiology follows a consistent format in discussing all the medical diseases: etiology is covered first, followed by epidemiology, host defenses, identification, diagnosis, prevention, and control. Hundreds of color photographs and drawings, summary boxes, and tables help reinforce key points, ensuring that Medical Microbiology is focused, attractive, and easy-to-follow.

In recent years, enzymatic catalysis in organic solvents—as opposed to aqueous solutions—has gained considerable attention as a powerful new approach to the preparation of natural products, pharmaceuticals, fine chemicals, and food ingredients. In Enzymes in Nonaqueous Solvents: Methods and Protocols, leading chemists, biochemists, biotechnologists, and process engineers summarize for the first time a wide range of methods for executing enzymatic transformations under nonaqueous conditions. Each method includes detailed step-by-step instructions for its successful completion, a list of materials, and ancillary notes that explain the scientific basis of the procedure, as well as troubleshooting. Also provided are a generic description of key reactions, advice on biocatalyst preparation, discussion of reaction conditions, and instructions on bioreactor design. Comprehensive and state-of-the-art, Enzymes in Nonaqueous Solvents: Methods and Protocols offers today's synthetic chemists, biochemists, and process engineers all the essential information needed to carry out enzymatic reactions in nonaqueous media, as well as to successfully scale up to production quantities.

The development of competitive agro-industries is crucial for creating employment and income opportunities as well as enhancing the quality of and demand for farm products. Agro-industries can have a real effect on international development by increasing economic growth and reducing poverty in both rural and urban areas of developing countries. However, in order to avoid adverse effects to vulnerable countries and people, sound policies and strategies for fostering agro-industries are needed. Agro-Industries for Development highlights the current status and future course for agro-industries and brings attention to the contributions this sector can make to international development. The book includes contributions from agro-industry specialists, academic experts and UN technical agencies, chapters address the strategies and actions required for improving agro-industrial competitiveness in ways that can create income, generate employment and fight poverty in the developing world. This book is a co-publication with FAO and UNIDO.

This detailed volume examines the latest techniques and protocols associated with zymography, the practice of detecting enzyme activity on electrophoretic gels. Sections cover subjects such as endopeptidase zymography, reverse zymography & in situ zymography, 2D zymography, as well as a variety of special cases. Written in the highly respected Methods in Molecular Biology series format, chapters include brief introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Comprehensive and practical, Zymography: Methods and Protocols serves as an ideal aid for a broad array of researchers from the fields of biological and medicinal science, as well as scientists working in clinical and diagnostic medicine, medical genetics, agricultural entomology, genetic monitoring of environmental pollution, and forensic science.

Weed Ecology

Dublin, Ireland, 26-29 August 2007

An Annual Review

Medical Biochemistry E-Book

Antioxidant Networks and Signaling

Mechanisms and Applications

The first 1,000 days, from conception to two years of age, is a critical period of growth and development. Exposures to dietary, environmental, hormonal, and other stressors during this window have been associated with an increased risk of poor health outcomes, some of which are irreversible. The book addresses this crucial interval of early life across biological disciplines, linking concepts related to all biological fields to outcomes during the first 1,000 days (e.g. fetal growth and pregnancy outcomes) and beyond (e.g. gut microbiome and cardiovascular disease later in life). The strength of this book lies in its cross-disciplinary nature.

Now fully revised, this acclaimed textbook efficiently links basic biochemistry with the day-to-day practice of medicine. You will learn basic science concepts and see them illustrated by clinical cases that describe patients you will likely encounter in your clinical training. You will also learn about the use of laboratory tests to diagnose and monitor the most important conditions. Brought to you in a thorough yet accessible manner, this new edition of Medical Biochemistry highlights the latest developments in regulatory and molecular biology, signal transduction, biochemistry and biomarkers of chronic disease, and bioinformatics and the ‘-omics’. It highlights the most important global medical issues: diabetes mellitus, obesity and malnutrition, cancer and atherosclerotic cardiovascular disease, and addresses the role of nutrition and exercise in medicine.

Featuring a team of expert contributors that includes investigators involved in cutting-edge research as well as experienced clinicians, this book offers a unique combination of research and clinical practice tailored to today's integrated courses. Read organ-focused chapters addressing the biochemistry of the bone, kidney, liver, lungs and muscle; and system-focused ones addressing the biochemistry of the immune and endocrine systems, neurochemistry and neurotransmission, and cancer

With contributions that review research on this topic throughout the world, Oxidative Damage to Plants covers key areas of discovery, from the generation of reactive oxygen species (ROSs), their mechanisms, quenching of these ROSs through enzymatic and non-enzymatic antioxidants, and detailed aspects of such antioxidants as SOD and CAT. Environmental stress is responsible for the generation of oxidative stress, which causes oxidative damage to biomolecules and hence reduces crop yield. To cope up with these problems, scientists have to fully understand the generation of reactive oxygen species, its impact on plants and how plants will be able to withstand these stresses. Provides invaluable information about the role of antioxidants in alleviating oxidative stress Examines both the negative effects (senescence, impaired photosynthesis and necrosis) and positive effects (crucial role that superoxide plays against invading microbes) of ROS on plants Features contributors from a variety of regions globally

While some plants are valued and selected for their beauty, others are reviled for their apparent lack of these traits. Weeds are recognized worldwide as undesirable economic pests; however, the value of any plant is unquestionably determined by the perception of the viewer. This book looks at weeds from an ecological viewpoint, emphasizing the way in which one species interacts with others.

Book Of Abstracts Of The 58th Annual Meeting Of The European Association For Animal Production

Zymography

Biochemistry

Coffee Pulp

Handbook of Plant and Crop Stress

Oxidative Damage to Plants

Plants depend on physiological mechanisms to combat adverse environmental conditions, such as pathogen attack, wounding, drought, cold, freezing, salt, UV, intense light, heavy metals and SO2. Many of these cause excess production of active oxygen species in plant cells. Plants have evolved complex defense systems against such oxidative stress. There are physical and chemical methods of synthesis of nanomaterials. But due to the damage caused by these methods to the environment there is a pressing need of green nanotechnology, which is a clean and eco-friendly technology for the development of nanomaterials. The present book includes green synthesis of nanoparticles by algae, diatoms and plants. The mechanism behind the synthesis of nanoparticles will also be discussed. The book would be a valuable resource for students, researchers and teachers of biology, chemistry, chemical technology, nanotechnology, microbial technology and those who are interested in green nanotechnology.

Food safety awareness is at an all time high, new and emerging threats to the food supply are being recognized, and consumers are eating more and more meals prepared outside of the home. Accordingly, retail and foodservice establishments, as well as food producers at all levels of the food production chain, have a growing responsibility to ensure that proper food safety and sanitation practices are followed, thereby, safeguarding the health of their guests and customers. Achieving food safety success in this changing environment requires going beyond traditional training, testing, and inspectional approaches to managing risks. It requires a better understanding of organizational culture and the human dimensions of food safety. To improve the food safety performance of a retail or foodservice establishment, an organization with thousands of employees, or a local community, you must change the way people do things. You must change their behavior. In fact, simply put, food safety equals behavior. When viewed from these lenses, one of the most common contributing causes of food borne disease is unsafe behavior (such as improper hand washing, cross-contamination, or undercooking food). Thus, to improve food safety, we need to better integrate food science with behavioral science and use a systems-based approach to managing food safety risk. The importance of organizational culture, human behavior, and systems thinking is well documented in the occupational safety and health fields. However, significant contributions to the scientific literature on these topics are noticeably absent in the field of food safety.

Fruit and fruit products, in all their many varieties and variations, are major world commodities and part of the economic life blood of many countries, particularly in the developing world. The perception of the healthy nature of fruit is a major reason for its increased consumption in the developed world, and many consumers today find a wider selection of fruit varieties, available at all times of the year, than ever before. This volume, however, is not so much concerned with fresh fruit as those principal areas of processing to which it may be subjected. Fruit processing arose as a means of utilizing a short-lived product and preserving its essential nutritional qualities as far as possible. A chapter on the nutritional aspects of fruit is included in this work to reflect the importance of this topic to most consumers. After a general introduction, the chapter on fruit storage is the only contribution which deals with a process from which fruit emerges in essentially the same physical condition. Beyond that the book sets out to cover most of the major areas in which fruit may be processed into forms which bear varying resemblances to the original raw material.

Plant Invasions

Springer Handbook of Science and Technology Indicators

Vaccine Design

The Grape Genome

Enzymes in Nonaqueous Solvents

Composition, Technology, and Utilization

Grain legumes, including common-bean, chickpea, pigeonpea, pea, cowpea, lentil and others, form important constituents of global diets, both vegetarian and non-vegetarian. Despite this significant role, global production has increased only marginally in the past 50 years. The slow production growth, along with a rising human population and improved buying capacity has substantially reduced the per capita availability of food legumes. Changes in environmental climate have also had significant impact on production, creating a need to identify stable donors among genetic resources for environmentally robust genes and designing crops resilient to climate change. Genetic and Genomic Resources of Grain Legume Improvement is the first book to bring together the latest resources in plant genetics and genomics to facilitate the identification of specific germplasm, trait mapping and allele mining to more effectively develop biotic and abiotic-stress-resistant grains. This book will be an invaluable resource for researchers, crop biologists and students working with crop development. Explores origin, distribution and diversity of grain legumes Presents information on germplasm collection, evaluation and maintenance Offers insight into pre-breeding/germplasm enhancement efforts Integrates genomic and genetic resources in crop improvement Internationally contributed work

This book contains recent advances about CD and NCGS written in eight chapters and is divided in three sections. In the first section, the main hallmarks of both diseases are described, together with the current diagnostic criteria of CD and its influence on the response to the vaccination against hepatitis B virus infection. The second section is dedicated to the description of several techniques for gluten determination in foods and if its consumption is good for nonceliac people. Finally, the third section contains complementary information related to the description and application of novel endoscopic techniques for confirming the diagnosis of CD. Another topic describes the growing consumption of gluten-free products and the adherence to this type of diet.

This book offers an overview of the diverse fields application of proteases (also termed proteolytic enzymes or proteinases), including food science and technology, pharmaceutical industries, and detergent manufacturing, reviewing the advances in the biotechnological application plant proteolytic enzymes over the last decade. In recent years, they have been the focus of renewed attention from the pharmaceutical and biotechnology industries, not only because of their activity on a wide variety of proteins but also because they are active over a range of temperatures and pHs. The main audience of this book are researchers working with plant proteases but also professionals from several industry segments such as food production and pharmaceutical companies.

Weeds hold an enigmatic and sometimes-controversial place in agriculture, where they are generally reviled, grudgingly tolerated, and occasionally admired. In most cases, growers make considerable effort to reduce the negative economic impact of weeds because they compete with crops for resources and hinder field operations, thereby affecting crop productivity and quality, and ultimately the sustainability of agriculture. Weed control in production agriculture is commonly achieved through the integration of chemical, biological, and mechanical management methods. Chemicals (herbicides) usually inhibit the growth and establishment of weed plants by interfering with various physiological and biochemical pathways. Biological methods include crop competition, smother crops, rotation crops, and allelopathy, as well as specific insect predators and plant pathogens. Mechanical methods encompass an array of tools from short handled hoes to sophisticated video-guided robotic machines. Integrating these technologies, in order to relieve the negative impacts of weeds on crop production in a way that allows growers to optimize profits and preserve human health and the environment, is the science of weed management.

Oxidative Stress in Plants

Methods and Protocols: Volume 2: Vaccines for Veterinary Diseases

Plant Cell Culture Protocols

From Seed Germination to Young Plants

Creating a Behavior-Based Food Safety Management System

Implications for Management

Discoveries from the past decades revealed that RNA molecules are much more than inert intermediates between the coding DNA sequences and their functional products, proteins. Today, RNAs are recognized as active regulatory molecules influencing gene expression, chromatin organization and genome stability, thus impacting all aspects of plant life including development, growth, reproduction and stress tolerance. Innovations in methodologies, the expanding application of next-generation sequencing technologies, and the creation of public datasets and databases have exposed a new universe of RNA-based mechanisms and led to the discovery of new families of non-coding RNAs, uncovered the large extent of alternative splicing events, and highlighted the potential roles of RNA modifications and RNA secondary structures. Furthermore, considerable advances have been made in identifying RNA-binding and processing factors involved in the synthesis and maturation of different forms of RNA molecules as well as in RNA processing, biochemical modifications or degradation. This Research Topic showcases the broad biological significance of RNAs in plant systems and contains eight original research articles, one review and four mini-reviews, covering various RNA-based mechanisms in higher plants. Emerging new technologies and novel multidisciplinary approaches are empowering the scientific community and will expectedly bring novel insights into our understanding of the mechanisms through which RNA is regulated and regulates biological processes in plant cells.

This book describes the current state of international grape genomics, with a focus on the latest findings, tools and strategies employed in genome sequencing and analysis, and genetic mapping of important agronomic traits. It also discusses how these are having a direct impact on outcomes for grape breeders and the international grape research community. While V. vinifera is a model species, it is not always appreciated that its cultivation usually requires the use of other Vitis species as rootstocks. The book discusses genetic diversity within the Vitis genus, the available genetic resources for breeding, and the available genomic resources for other Vitis species. Grapes (Vitis vinifera spp. vinifera) have been a source of food and wine since their domestication from their wild progenitor (Vitis vinifera ssp. sylvestris) around 8,000 years ago, and they are now the world's most valuable horticultural crop. In addition to being economically important, V. vinifera is also a model organism for the study of perennial fruit crops for two reasons: Firstly, its ability to be transformed and micropropagated via somatic embryogenesis, and secondly its relatively small genome size of 500 Mb. The economic importance of grapes made V. vinifera an obvious early candidate for genomic sequencing, and accordingly, two draft genomes were reported in 2007. Remarkably, these were the first genomes of any fruiting crop to be sequenced and only the fourth for flowering plants. Although riddled with gaps and potentially omitting large regions of repetitive sequences, the two genomes have provided valuable insights into grape genomes. Cited in over 2,000 articles, the genome has served as a reference in more than 3,000 genome-wide transcriptional analyses. Further, recent advances in DNA sequencing and bioinformatics are enabling the assembly of reference-grade genome references for more grape genotypes revealing the exceptional extent of structural variation in the species.

Oxidative Stress in PlantsCRC Press

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Methods and Protocols

Ecology, Growth and Environmental Influences

The Molecular Basis of Life

Celliac Disease and Non-Celliac Gluten Sensitivity

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Computer and Information Science Applications in Bioprocess Engineering

Ascorbic acid (ASA), vitamin C, is one of the most abundant water-soluble antioxidant in plants and animals. In plants ASA serves as a major redox buffer and regulates various physiological processes controlling growth, development, and stress tolerance. Recent studies on ASA homeostasis have broadened our understanding of these physiological events. At the mechanistic level, ASA has been shown to participate in numerous metabolic and cell signaling processes, and the dynamic relationship between ASA and reactive oxygen species (ROS) has been well documented. Being a major component of the ascorbate-glutathione (ASA-GSH) cycle, ASA helps to modulate oxidative stress in plants by controlling ROS detoxification alone and in co-operation with glutathione. In contrast to the single pathway responsible for ASA biosynthesis in animals, plants utilize multiple pathways to synthesize ASA, perhaps reflecting the importance of this molecule to plant health. Any fluctuations, increases or decreases, in cellular ASA levels can have profound effects on plant growth and development, as ASA is associated with the regulation of the cell cycle, redox signaling, enzyme function and defense gene expression. Although there has been significant progress made investigating the multiple roles ASA plays in stress tolerance, many aspects of ASA-mediated physiological responses require additional research if ASA metabolism is to be manipulated to enhance stress-tolerance. This book summarizes the roles of ASA that are directly or indirectly involved in the metabolic processes and physiological functions of plants. Key topics include ASA biosynthesis and metabolism, compartmentation and transport, ASA-mediated ROS detoxification, as well as ASA signaling functions in plant growth, development and responses to environmental stresses. The main objective of this volume is therefore to supply comprehensive and up-to-date information for students, scholars and scientists interested in or currently engaged in ASA research.

Cell culture methodologies have become standard procedures in most plant laboratories. Currently, facilities for in vitro cell cultures are found in practically every plant biology laboratory, serving different purposes since tissue culture has turned into a basic asset for modern biotechnology, from the fundamental biochemical aspects to the massive propagation of selected individuals. " Plant Cell Culture Protocols, Third Edition is divided into five convenient sections that cover topics from general methodologies, such as culture induction, growth and viability evaluation, statistical analysis and contamination control, to highly specialized techniques, such as clonal propagation, haploid production, somatic embryogenesis, organelle transformation. The volume concludes with a section on the laborious process of measuring the epigenetic changes in tissue cultures. " Written in the successful Methods in Molecular Biology™ series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible protocols, and notes on troubleshooting and avoiding known pitfalls. Authoritative and easily accessible, Plant Cell Culture Protocols, Third Edition seeks to serve both professionals and novices with its guide to the most common and applicable techniques and methods for plant tissue and cell culture.

There are many books on aspects of plant invasions, but none that focus on the key role of species interactions in mediating invasions. This book reviews exciting new findings and explores how new methods and tools are shedding new light on crucial processes in plant invasions. This book will be of interest to academics and students of ecology, researchers engaged in developing management solutions, scientific managers of natural ecosystems, and policy-makers.

This essential volume comprehensively discusses redox-active therapeutics, focusing particularly on their molecular design, mechanistic, pharmacological and medicinal aspects. The first section of the book describes the basic aspects of the chemistry and biology of redox-active drugs and includes a brief overview of the redox-based pathways involved in cancer and the medical aspects of redox-active drugs, assuming little in the way of prior knowledge. Subsequent sections and chapters describe more specialized aspects of central nervous system injuries, neurodegenerative diseases, pain, radiation injury and radioprotection (such as of brain, lungs, head and neck and erectile function) and neglected diseases (e.g., leishmaniasis). It encompasses several major classes of redox-active experimental therapeutics, which include porphyrins, salens, nitrones, and most notably metal-containing (e.g., Mn, Fe, Cu, Zn, Sb) drugs as either single compounds or formulations with nanomaterials and quantum dots. Numerous illustrations, tables and figures enhance and complement the text; extensive references to relevant literature are also included. Redox-Active Therapeutics is an invaluable addition to Springer's Oxidative Stress in Applied Basic Research and Clinical Practice series. It is essential reading for researchers, clinicians and graduate students interested in understanding and exploring the Redoxome—the organism redox network—as an emerging frontier in drug design, redox biology and medicine.

Green Biosynthesis of Nanoparticles

Bibliografia del Cafe

Fruit Processing

Vaccine Design: Methods and Protocols: Volume 1: Vaccines for Human Diseases

Medical Microbiology

Oceanography and Marine Biology

Includes Bibliographical references and indexes.

This handbook presents the state of the art of quantitative methods and models to understand and assess the science and technology system. Focusing on various aspects of the development and application of indicators derived from data on scholarly publications, patents and electronic communications, the individual chapters, written by leading experts, discuss theoretical and methodological issues, illustrate applications, highlight their policy context and relevance, and point to future research directions. A substantial portion of the book is dedicated to detailed descriptions and analyses of data sources presenting both traditional and advanced approaches. It addresses the main bibliographic metrics and indexes, such as the journal impact factor and the h-index, as well as altmetric and webometric indicators and science mapping techniques on different levels of aggregation and in the context of their value for the assessment of research performance as well as their impact on research policy and society. It also presents and critically discusses various national research evaluation systems. Complementing the sections reflecting on the science system, the technology section includes multiple chapters that explain different aspects of patent statistics, patent classification and database search methods to retrieve patent-related information. In addition, it examines the relevance of trademarks and standards as additional technological indicators. The Springer Handbook of Science and Technology Indicators is an invaluable resource for practitioners, scientists and policy makers wanting a systematic and thorough analysis of the potential and limitations of the various approaches to assess research and research performance.

Biotechnology has been labelled as one of the key technologies of the last two decades of the 20th Century, offering boundless solutions to problems ranging from food and agricultural production to pharmaceutical and medical applications, as well as environmental and bioremediation problems. Biological processes, however, are complex and the prevailing mechanisms are either unknown or poorly understood. This means that adequate techniques for data acquisition and analysis, leading to appropriate modeling and simulation packages that can be superimposed on the engineering principles, need to be routine tools for future biotechnologists. The present volume presents a masterly summary of the most recent work in the field, covering: instrumentation systems; enzyme technology; environmental biotechnology; food applications; and metabolic engineering.

Theoretical physicist Nicolescu (CNRS and U. of Paris, France) employs a view of the universe found in quantum physics to build his argument as to how basic spiritual questions may be answered and the problems of humanity, such as greed and the dichotomy between rich and poor, can be overcome. His method is called transdisciplinarity because it requires a way of thinking that rises above and beyond the methods of individual disciplines, seeing multiple levels of meaning rather than simple dichotomies. Annotation copyrighted by Book News, Inc., Portland, OR

The Role of Biotic Interactions

Handbook of Fruits and Fruit Processing

Redox-Active Therapeutics

Agro-Industries for Development

Plant RNA Biology

The Biology of the First 1,000 Days