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TANIYA JAMIE

Lacrimal Gland, Tear Film, and Dry Eye Syndromes 3
Elsevier Inc. Chapters
Little more than three years down the line and I am already writing the Preface to a second volume to follow Protein and Peptide Analysis by Mass . What has happened in between these times to make this second venture worthwhile? New types of mass spectrometric instrumentation have appeared so that new techniques have become possible and existing techniques have become much more feasible. More particularly, however, the newer ionization te- niques, introduced for the analysis of high molecular weight materials, have now been thoroughly used and studied. As a result, there has been an en- mous improvement in the associated sample handling technology so that these methods are now routinely applied to much smaller sample amounts as well as to more intractable samples. Again, this particular community of mass spectrometry users has both increased in number and diversified. And, riding this wave of acceptance, leaders in the field have set their sights on more complex problems: molecular interaction, ion structures, quantitation, and kinetics are just a few of the newer areas reported in Mass Spectrometry of Proteins and Peptides. As with the first volume, one purpose of this collection, Mass Spectr- etry of Proteins and Peptides, is to show the reader what can be done by the application of mass spectrometry, and perhaps even to encourage the reader to venture down new paths.
Glycosylation Engineering of Biopharmaceuticals Springer Science & Business Media
Direct cell–cell communication is a common property of multicellular organisms that is achieved through membrane channels which are organized in gap junctions. The protein subunits of these intercellular channels, the connexins, form a multigene family that has been investigated in great detail in recent years. It has now become clear that, in different tissues, connexins speak several languages that control specific cellular functions. This progress has been made possible by the availability of new molecular tools and the improvement of basic techniques for the study of membrane channels, as well as by the use of genetic approaches to study protein function in vivo. More

important, connexins have gained visibility because mutations in some connexin genes have been found to be linked to human genetic disorders. Connexin Methods and Protocols presents in detail a collection of te- niques currently used to study the cellular and molecular biology of connexins and their physiological properties. The field of gap junctions and connexin research has always been characterized by a multidisciplinary approach c- bining morphology, biochemistry, biophysics, and cellular and molecular biology. This book provides a series of cutting-edge protocols and includes a large spectrum of practical methods that are available to investigate the fu- tion of connexin channels. Connexin Methods and Protocols is divided into three main parts.

Molecular Embryology Humana Press

Rubor (redness), tumor (swelling), calor (heat), and dolor (pain) are the classical signs of inflammation. These features are obvious in the skin, where injury or disease causes flare, wheal, and painful burning sensations. Vasodi- tation underlies the flare and heat, plasma exudation the swelling, and acti- tion of sensory nerves relays pain. In chronic conditions, skin biopsies show inflammatory cell infiltrate. Inflammation is not unique to the skin and contr- utes to disease and repair processes in other organ systems in the body. From the viewpoint of this volume, lung inflammation is now recognized as central to the pathophysiology of a number of severe respiratory conditions, the two most common being asthma and chronic obstructive pulmonary disease (COPD). In asthma, and to a lesser extent COPD, there is evidence of vasodilatation, with congestion of blood vessels accompanied by reddening of the airway mucosa, and of plasma exudation, leading to swelling of the airway wall. Similarly, although less pronounced than in the skin, there is evidence of pain, for example, the - pleasant chest sensations associated with asthma attacks. Understanding the pat- genesis of airway inflammation will enable rational design of drugs to effectively treat conditions such as asthma and COPD. However, whereas immediate access to the skin facilitates investigation of disease processes, the lung, although “open to atmosphere,” is much less accessible. Consequently, the investigation of lung inflammation is usually indirect. Thus, a wide variety of research techniques are used.

Studies in Natural Products Chemistry Springer Science & Business Media

Active ingredients in foods must remain fully functional for as long as necessary and be transported and discharged appropriately to have the desired nutritional effect. Delivery and controlled release systems are an essential way to achieve these aims. This important book reviews how to optimise these systems to maximise the health-promoting properties of food products. Opening chapters review factors affecting nutrient bioavailability and methods to test delivery system efficacy. Part two addresses materials used and specific techniques for delivery and release. The benefits and drawbacks of structured lipids, micro- and nano-emulsions, food-protein-derived materials, complexes and conjugates of biopolymers, and starch as an encapsulation material for delivery of functional food ingredients, are all considered. Part three discusses the delivery and controlled release of particular nutraceuticals such as antioxidants and vitamins, folic acid, probiotics, fish oils and proteins. Part four covers regulatory issues and future trends in bioactives and nutraceuticals. Edited by a leading expert in the field, Delivery and controlled release of bioactives in foods and nutraceuticals is a valuable reference for those working in the food industry and particularly those developing nutraceuticals. Reviews techniques to optimise the delivery and release of bioactives in food Discusses the factors that affect nutrient bioavailability and methods to test delivery system efficacy Addresses materials used and specific techniques for delivery and release

Studies in Natural Products Chemistry Springer Science & Business Media

Adipose tissue is recognized to be exquisitely sensitive to hormone action, and is also now recognized as a secretory and endocrine organ required for reproduction and good health. Adipocytes are “smart” cells able within the tissue to communicate with surrounding cells, but also with various organs, particularly via leptin acting on the central nervous system. Brown adipose tissue (BAT) and white adipose tissue (WAT) are known to be distinct tissues, whereas the heterogeneity of WAT depots is well est- lished. Unfortunately, excess WAT leads to obesity, which is the most common health problem in industrialized countries. Therefore, from both a scientific and a technical point of view, the time has come to create a survey of adipose tissues and their neglected adipocytes. In Adipose Tissue Protocols, I have attempted to gather together chapters from all areas of adipose tissue research—from in vivo to in vitro studies—and to provide methods covering a wide variety of techniques, including the choice of adipose tissue depot and of morphological techniques for the study of BAT and WAT; the isolation, subcellular fractionation, and transfection of adipocytes where the low density of these cells must be taken into account; assays of nutrient and ion fluxes and the metabolic aspects of nutrient uptake; assays of lipid-related enzymes; biopsies and quantification of lipid-related mRNAs; cultures of adipose precursor cells from WAT and BAT of various species, including human tissue; measurements of adipose secretory products; and assessment of WAT metabolism in vivo.

Flavoprotein Protocols Springer Science & Business Media

The development of PCR, which enables extremely small amounts of DNA to be amplified, led to the rapid development of a multiplicity of a- lytical procedures that permit use of this new resource for the analysis of genetic variation and for the detection of disease-causing mutations. The advent of capillary electrophoresis (CE), with its power to separate and a- lyze very small amounts of DNA, has also stimulated researchers to develop analytical procedures for the CE format. The advantages of CE in terms of speed and reproducibility of analyses are manifold. Furthermore, the high s- sitivity of detection, and the ability to increase sample throughput with par- lel analysis, has led to the creation of a full range of analysis of DNA molecules, from modified DNA adducts and single-strand oligonucleotides through PCR-amplified DNA fragments and whole chromosomes. Capillary Elect- phoresis of Nucleic Acids focuses on analytical protocols that can be used for detection and analysis of mutations and modification, from precise DNA loci through entire genomes of organisms. Important practical considerations for CE, such as the choice of separation media, electrophoresis conditions, and the influence of buffer additives and dyes on DNA mobility, are discussed in several key chapters and within particular applications.

Biological Soft Matter Springer Science & Business Media

John R. Crowther provides today's premier practical guide to the understanding and application of ELISA. Updating and greatly expanding his widely appreciated earlier publication, ELISA Theory and Practice (1995), this important work introduces chapters on such major new topics as checkerboard titrations, quality control of testing, kit production and control, novel monoclonal antibodies, validation of assays, statistical requirements for data examination, and epidemiological considerations. With its numerous worked examples, detailed instructions, and extensive illustrations, The ELISA Guidebook

offers a powerful synthesis of all the basic concepts and practical experimental details investigators need to understand, develop, and apply the new ELISA methodology successfully in day-to-day basic and clinical research.

Mass Spectrometry of Proteins and Peptides Springer Science & Business Media

Epithelial mucins are large complex cell surface and secreted glycoproteins produced by mucosal epithelial cells. In, Mucins: Methods and Protocols expert researchers in the field detail many of the methods which are now commonly used to study Mucins. These include methods and techniques for the best approaches to analysing each specific area of mucin biochemistry, physiology and biophysics before providing individual detailed experimental protocols together with troubleshooting and interpretation tips. Written in the highly successful Methods in Molecular BiologyTM series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, Mucins: Methods and Protocols is designed to be a useful resource for those entering the mucin field and to facilitate those already studying mucins to broaden their experimental approaches to understanding mucosal biology.

Lactic Acid Bacteria Humana Press

Microarray technology provides a highly sensitive and precise te- nique for obtaining information from biological samples, with the added advantage that it can handle a large number of samples simultaneously that may be analyzed rapidly. Researchers are applying microarray technology to understand gene expression, mutation analysis, and the sequencing of genes. Although this technology has been experimental, and thus has been through feasibility studies, it has just recently entered into widespread use for advanced research. The purpose of DNA Arrays: Methods and Protocols is to provide instruction in designing and constructing DNA arrays, as well as hybridizing them with biological samples for analysis. An additional purpose is to p- vide the reader with a broad description of DNA-based array technology and its potential applications. This volume also covers the history of DNA arrays—from their conception to their ready off-the-shelf availability—for readers who are new to array technology as well as those who are well versed in this field. Stepwise, detailed experimental procedures are described for constructing DNA arrays, including the choice of solid support, attachment methods, and the general conditions for hybridization. With microarray technology, ordered arrays of oligonucleotides or other DNA sequences are attached or printed to the solid support using au- mated methods for array synthesis. Probe sequences are selected in such a way that they have the appropriate sequence length, site of mutation, and T .

Molecular Diagnostics Springer Science & Business Media

This second edition provides new and updated tools for studying protein-carbohydrate interactions ranging from traditional biochemical methods to state-of-the-art techniques. This book focuses on four different research themes detailing methods for screening and quantifying CAZyme activity, investigating the interactions between proteins, carbohydrate ligands, methods for the visualization of carbohydrates, protein-carbohydrate complexes, structural and “omic” approaches for studying systems of CAZymes. Written in the format of the highly successful Methods in Molecular Biology series, each chapter includes an introduction to the topic, lists necessary materials and methods, includes tips on troubleshooting and known pitfalls, and step-by-step, readily reproducible protocols. Authoritative and cutting-edge, Carbohydrate- Protein Interactions: Methods and Protocols, Second Edition aims to be comprehensive guide for researchers in the field.

The Human Microbiome and Cancer Humana Press

The process whereby a single cell, the fertilized egg, develops into an adult has fascinated for centuries. Great progress in understanding that process, h- ever, has been made in the last two decades, when the techniques of molecular biology have become available to developmental biologists. By applying these techniques, the exact nature of many of the interactions responsible for forming the body pattern are now being revealed in detail. Such studies are a large, and it seems ever-expanding, part of most life-science groups. It is at newcomers to this field that this book is primarily aimed. A number of different plants and animals serve as common model org- isms for developmental studies. In Molecular Methods in Developmental Bi- ogy: Xenopus and Zebrafish, a range of the molecular methods applicable to two of these organisms are described, these are the South African clawed frog, Xenopus laevis, and the zebrafish, Brachydanio rerio. The embryos of both of these species develop rapidly and externally, making them particularly suited to investigations of early vertebrate development. However, both Xenopus and zebrafish have their own advantages and disadvantages. Xenopus have large, robust embryos that can be manipulated surgically with ease, but their pseudotetraploidy and long generation time make them unsuitable candidates for genetics. This disadvantage may soon be overcome by using the diploid Xenopus tropicalis, and early experiments are already underway. The transp- ent embryos of zebrafish render them well-suited for in situ hybridization and immunohistochemistry, and good for observing mutations in genetic screens.

Biosafety Assessment of Probiotic Potential Humana

As the major task of sequencing the human genome is near completion and full complement of human genes are catalogued, attention will be focused on the ultimate goal: to understand the normal biological functions of these genes, and how alterations lead to disease states. In this task there is a severe limitation in working with human material, but the mouse has been adopted as the favored animal model because of the available genetic resources and the highly conserved gene conservation linkage organization. In just of ten years since the first gene-targeting experiments were p- formed in embryonic stem (ES) cells and mutations transmitted through the mouse germline, more than a thousand mouse strains have been created. These achievements have been made possible by pioneering work that showed that ES cells derived from preimplantation mouse embryos could be cultured for prolonged periods without differentiation in culture, and that homologous rec- bination between targeting constructs and endogenous DNA occurred at a f- quency sufficient for recombinants to be isolated. In the next few years the mouse genome will be systematically altered, and the techniques for achi- ing manipulations are constantly being streamlined and improved.

Journal and Tracker: Healing Solid Adenocarcinoma with Mucin Production Springer Science & Business Media

Suffering from a variety of conditions, we formed a small group of individuals that were also struggling, and we helped each other remain accountable as we healed ourselves naturally. How did we do this? We researched tirelessly and tried multiple different methods until we finally started seeing results through the use of protocols taught by legendary healers, Dr Arnold Ehret and Dr Robert Morse. Note: all information and resources are readily available for personal study and application, online. Dr Arnold Ehret's books can be downloaded freely if you search for "arnold ehret books pdf". Visit rawfigs.com for Dr Robert Morse videos which can be searched through by keywords via the search bar. Familiarise yourself with their teachings and protocols and move

forward as you put this journal to use. Throughout our healing journeys, we found the process of recording our progress to be of great help. Our journals also helped us in note-taking of anything that we found useful, along with any tips and hacks that we came across. We felt inspired to create a personalised 30 day journal for your condition encouraging you to track your thoughts, feelings, progress and knowledge as you enjoy success and fulfillment on your journey of self healing. One of the key conclusions that we reached through our individual journeys was that whether you are a sufferer of Solid Adenocarcinoma with Mucin Production, or any other condition, the same protocol that we used to heal will apply to you. However, dependant on the severity and time endured, you may need to follow the protocols for longer, using specific herbs (and glandulars) in order to achieve positive results, but you can make your own adjustments as you learn more. Equipped with the information found on this page, we trust that you will benefit greatly from this journal and reach your goals. Use it to keep yourself accountable, use it for noting down useful information that you discover, whilst recording the raw vegan foods (fruit, vegetables, herbs) that you eat and juice. Record daily routines such as time spent fasting, time spent eating, water consumed, sauna or lymph moving exercises performed, and anything else that you find to be supportive. You will never miss a moment now and remain focused on your goals. We wish you all the best. The Health Formation Team

Galectins Frontiers Media SA

In Protein Structure, Stability, and Folding, Kenneth P. Murphy and a panel of internationally recognized investigators describe some of the newest experimental and theoretical methods for investigating these critical events and processes. Among the techniques discussed are the many methods for calculating many of protein stability and dynamics from knowledge of the structure, and for performing molecular dynamics simulations of protein unfolding. New experimental approaches presented include the use of co-solvents, novel applications of hydrogen exchange techniques, temperature-jump methods for looking at folding events, and new strategies for mutagenesis experiments. Unique in its powerful combination of theory and practice, Protein Structure, Stability, and Folding offers protein and biophysical chemists the means to gain a more comprehensive understanding of some of this complex area by detailing many of the major techniques in use today.

Glycobiology Protocols Newnes

The mucins (mucus glycoproteins) have long been a complex corner of glycoprotein biology. While dramatic advances in the separation, structural an- ysis, biosynthesis, and degradation have marked the progress in general glycop- tein understanding, the mucins have lagged behind. The reasons for this lack of progress have always been clear and are only now being resolved. The mucins are very large molecules; they are difficult to separate from other molecules present in mucosal secretions or membranes; they are often degraded owing to natural protective functions or to isolation methodology and their peptide and oligos- charide structures are varied and complex. Understanding these molecules has demanded progress in several major areas. Isolation techniques that protect the intact mucins and allow dissociation from other adsorbed but discrete molecules needed to be developed and accepted by all researchers in the field. Improved methods for the study of very large molecules with regard to their aggregation and polymerization were also needed. Structural analysis of the peptide domains and the multitude of oligosaccharide chains was required for smaller sample sizes, for multiple samples, and in shorter time. In view of these problems it is perhaps not surprising that the mucins have remained a dilemma, of obvious biological importance and interest, but very difficult to analyze.

Glycoanalysis Protocols Elsevier

Glycobiology involves studies of complex carbohydrates and posttrans- tional modifications of proteins, and has become an important interdiscip- nary field encompassing chemistry, biochemistry, biology, physiology, and pathology. Although initial research was directed toward elucidation of the different carbohydrate structures and the enzymes synthesizing them, the field has now moved toward identifying the functions of carbohydrates. The pro- cols described in Glycobiology Protocols form a solid basis for investigations of glycan functions in health and disease. The cloning of many of the genes participating in glycosylation processes has helped to enhance our knowledge of how glycosylation is controlled, but has also added another dimension of complexity to the great heterogeneous variety of the structures of the oligos- charides of glycoproteins, proteoglycans, and glycolipids. A family of similar enzyme proteins exists for each glycosylation step. Glycosyltransferases are extremely specific for both the nucleotide sugar donor and the acceptor s- strate, but many other factors control sugar transfer, including the locali- tion and topology of enzymes, cofactors, possible chaperone proteins, and the availability of sugar acceptor substrates. The analysis of the intracellular organization of glycosylation and of the factors controlling the activities of the participating enzymes in the cell are important areas that need more research efforts. Another challenge for future research is to understand the glycodynamics of a cell, that is, how the cell responds to stimuli leading to biological and pathological changes in terms of alterations in glycosylation, and how this affects the biology of the cell.

DNA-Protein Interactions Springer Science & Business Media

Glyco-engineering is being developed as a method to control the composition of carbohydrates and to enhance the pharmacological properties of monoclonal antibodies (mAbs) and other proteins. In Glycosylation Engineering of Biopharmaceuticals: Methods and Protocols, experts in the field provide readers with production and characterization protocols of glycoproteins and glyco-engineered biopharmaceuticals with a focus on mAbs. The volume is divided in four complementary parts dealing with glyco-engineering of therapeutic proteins, glycoanalytics, glycoprotein complexes characterization, and PK/PD assays for therapeutic antibodies. Written in the highly successful Methods in Molecular BiologyTM series format, 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 cutting-edge, Glycosylation Engineering of Biopharmaceuticals: Methods and Protocols serves as an ideal guide for scientists striving to push forward the exciting field of engineered biopharmaceuticals.

Fortschritte der Chemie organischer Naturstoffe / Progress in the Chemistry of Organic Natural Products 85 Springer Science & Business Media

Galectins: Methods and Protocols is the first book solely dedicated to methodological approaches designed to study galectin function. The galectin family represents one of the most pleiotropic families, with individual members having been implicated in various aspects of nearly every biological process described, from RNA splicing to complex regulatory circuits that orchestrate adaptive immunity. Given the diverse roles of galectins in a variety of biological systems, studying these glycan binding proteins often requires the assimilation of diverse technical skills to fully appreciate their biological function. Their nearly ubiquitous expression and ability to bind highly modifiable

carbohydrate ligands, in addition to a variety of other regulatory proteins, allows these glycan binding proteins (GBPs) to possess the capacity to regulate a wide variety of biological processes. Individual chapters are dedicated to examining salient features of galectin functions. 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, Galectins: Methods and Protocols seeks to serve both professionals and novices with a useful framework when examining galectin function for many years to come.

DNA Arrays Springer Science & Business Media

The volumes of this classic series, now referred to simply as "Zechmeister" after its founder, L. Zechmeister, have appeared under the Springer Imprint ever since the series' inauguration in 1938. The volumes contain contributions on various topics related to the origin, distribution, chemistry, synthesis, biochemistry, function or use of various classes of naturally occurring substances ranging from small molecules to biopolymers. Each contribution is written by a recognized authority in his field and provides a comprehensive and up-to-date review of the topic in question. Addressed to biologists, technologists, and chemists alike, the series can be used by the expert as a source of information and literature citations and by the non-expert as a means of orientation in a rapidly developing discipline.

Journal of Chromatography John Wiley & Sons

Dr. Tom Moss assembles the new standard collection of cutting-edge techniques to identify key protein DNA interactions and define their components, their manner of interaction, and their manner of function, both in the cell and in the test tube. The techniques span a wide range, from factor identification to atomic detail, and include multiple DNA footprinting analyses, including in vivo strategies, gel shift (EMSA) optimization, SELEX, surface plasmon resonance, site-specific DNA protein crosslinking, and UV laser crosslinking. Comprehensive and broad ranging, DNA Protein Interactions: Principles and Protocols, 2nd Edition, offers a stellar array of over 100 up-to-date and readily reproducible techniques that biochemists and molecular, cellular, and developmental biologists can use successfully today to understand DNA protein interactions.