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KEY=MICROSCOPE - MCMAHON JOSE

MANUAL OF INTRACYTOPLASMIC SPERM INJECTION IN HUMAN ASSISTED REPRODUCTION

WITH OTHER ADVANCED MICROMANIPULATION TECHNIQUES TO EDIT THE GENETIC AND CYTOPLASMIC CONTENT OF THE OOCYTE

Cambridge University Press For around half of the couples who have trouble conceiving the cause of infertility is sperm-related. Intracytoplasmic sperm injection (ICSI) is the most common and successful treatment for male infertility. Here, the pioneers for the technique, along with authorities in the field, describe the underlying science of ICSI and other micromanipulation techniques. Practical advice for performing the techniques is covered in depth, including sperm selection, laser-assisted ICSI, and the use of piezo in ICSI. Examining the safety of ICSI in animal models as well as the impact of ICSI on the health and well-being of the children conceived through the procedure is discussed. This manual is an essential resource for clinical embryologists and laboratory personnel wishing to refine or develop techniques and improve outcomes.

PRACTICAL MANUAL OF IN VITRO FERTILIZATION

ADVANCED METHODS AND NOVEL DEVICES

Springer Science & Business Media The Practical Manual of In Vitro Fertilization: Advanced Methods and Novel Devices is a unique, accessible title that provides a complete review of the most well-established and current diagnostic and treatment techniques comprising in vitro fertilization. Throughout the chapters, a uniform structure is employed, including a brief abstract, a keyword glossary, a step-by-step protocol of the laboratory procedures, several pages of expert commentary, key issues of clinical concern, and a list of references. The result is a readily accessible, high quality reference guide for reproductive endocrinologists, urologists, embryologists, biologists and research scientists. The Manual also offers an excellent description of novel procedures that will likely be employed in the near future. An indispensable resource for physicians and basic scientists, the Practical Manual of In Vitro Fertilization: Advanced Methods and Novel Devices is an invaluable reference and addition to the literature.

MICROSCOPY AND PHOTOMICROGRAPHY

A WORKING MANUAL

CRC Press Brief historical background and basic principles of the microscopy; Set-up and alignment; Numerical aperture; Condensing systems and their use; Objectives; Phase contrast and nomarski interference; Troubleshooting; Photomicrography; Fluorescence microscopy; Field location; Special techniques.

OFFICIAL NIKON F AND NIKKORMAT MANUAL

PLANT TISSUE CULTURE MANUAL - SUPPLEMENT 7

FUNDAMENTALS AND APPLICATIONS

Springer Science & Business Media Plant tissue culture has a long history, dating back to the work of Gottlieb Haberlandt and others at the end of the 19th century, but the associated concepts and techniques have reached a level of usefulness and application which has never been greater. The technical innovations have given new insights into fundamental aspects of plant differentiation and development, and have paved the way to the identification of strategies for the genetic manipula tion of plants. It is the aim of this manual to deliver a broad range of these techniques in a form which is accessible to students and research scientists of diverse backgrounds, including those with little or no previous experience. The themes of the manual aim to reflect those research areas which have been advanced by tissue culture technology. As was the case for the sister volume Plant Molecular Biology Manual, the objective has been from the start to produce a manual which is at home on the laboratory bench. The plastic-covered, ring-bound format has proved to be most popular and is retained here. Equally, the emphasis has been on producing a collection of detailed step-by-step protocols, each supplemented with an introductory text and practical footnotes, to provide the next best thing to a supervisor at one's shoulder.

OFFICIAL NIKON-NIKKORMAT MANUAL

Although Grandma has seen many wonderful sights around the world, none compare to the wonder of her bouncy, growing, "heaven-and-earthly" granddaughter Madeleine.

A COLOR ATLAS AND INSTRUCTION MANUAL OF PERIPHERAL BLOOD CELL MORPHOLOGY

Lippincott Williams & Wilkins This essential guide can help readers identify blood type cells, which are difficult to categorize, and explains the morphologic characteristics of peripheral blood cells in detail. Some of the book's features include: color photographs that depict each stage of cell maturation in the exact sequence of development; comparative photographs of difficult-to-identify cells from different cell lines with adjacent diagrams and instructions in chart form; and an explanation of the entire differential procedure, with mathematical guidelines.

MANUAL OF ANIMAL ANDROLOGY

CABI A succinct reference for those assessing and managing the reproductive functionality of male animals, this practical manual contains both generic and species-specific information suitable for widespread worldwide application. It covers all relevant aspects such as handling and restraint, physical examination, reproductive examination, important reproductive diseases, biosecurity, semen collection and its assessment, mating behaviour, and the fundamentals of semen handling and preservation for artificial breeding. With information presented in a manner that will remain useful for years to come, Manual of Animal Andrology is an essential resource for veterinarians, theriogenologists, animal breeders, and students of veterinary and animal sciences.

OFFICIAL NIKON F AND NIKKOREX F MANUAL

MANUAL OF CABLE OSTEOSYNTHESES

HISTORY, TECHNICAL BASIS, BIOMECHANICS OF THE TENSION BAND PRINCIPLE, AND INSTRUCTIONS FOR OPERATION

Springer Science & Business Media In bone surgery it is essential to compress fractures interfragmentarily in order to make them resistant to the tensile force of muscles and the force resulting from acceleration and deceleration. The author explains the biomechanics of the tension band in detail. Theoretical findings are confirmed by clinical test results. All osteosynthetic techniques which can be carried out with cable are described giving details of operation instructions. Errors and risks are always pointed out. A reference book and operative manual at a time.

THE AGT CYTOGENETICS LABORATORY MANUAL

John Wiley & Sons Cytogenetics is the study of chromosome morphology, structure, pathology, function, and behavior. The field has evolved to embrace molecular cytogenetic changes, now termed cytogenomics. Cytogeneticists utilize an assortment of procedures to investigate the full complement of chromosomes and/or a targeted region within a specific chromosome in metaphase or interphase. Tools include routine analysis of G-banded chromosomes, specialized stains that address specific chromosomal structures, and molecular probes, such as fluorescence in situ hybridization (FISH) and chromosome microarray analysis, which employ a variety of methods to highlight a region as small as a single, specific genetic sequence under investigation. The AGT Cytogenetics Laboratory Manual, Fourth Edition offers a comprehensive description of the diagnostic tests offered by the clinical laboratory and explains the science behind them. One of the most valuable assets is its rich compilation of laboratory-tested protocols currently being used in leading laboratories, along with practical advice for nearly every area of interest to cytogeneticists. In addition to covering essential topics that have been the backbone of cytogenetics for over 60 years, such as the basic components of a cell, use of a microscope, human tissue processing for cytogenetic analysis (prenatal, constitutional, and neoplastic), laboratory safety, and the mechanisms behind chromosome rearrangement and aneuploidy, this edition introduces new and expanded chapters by experts in the field. Some of these new topics include a unique collection of chromosome heteromorphisms; clinical examples of genomic imprinting; an example-driven overview of chromosomal microarray; mathematics specifically geared for the cytogeneticist; usage of ISCN’s cytogenetic language to describe chromosome changes; tips for laboratory management; examples of laboratory information systems; a collection of internet and library resources; and a special chapter on animal chromosomes for the research and zoo cytogeneticist. The range of topics is thus broad yet comprehensive, offering the student a resource that teaches the procedures performed in the cytogenetics laboratory environment, and the laboratory professional with a peer-reviewed reference that explores the basis of each of these procedures. This makes it a useful resource for researchers, clinicians, and lab professionals, as well as students in a university or medical school setting.

MICROMANIPULATION IN ASSISTED CONCEPTION

Cambridge University Press This guide to micromanipulation techniques, for assisted conception in a clinical setting, includes detailed descriptions of all common micromanipulation systems currently in use in IVF laboratories. In explaining how to optimize their successful use, the volume covers state-of-the-art techniques including ICSI, and procedures such as assisted hatching and the blastomere biopsy (for PGD). Valuable information on troubleshooting mechanical and technical difficulties is provided to help professionals ranging from technicians to consultant obstetricians master the techniques.

MANUAL OF ASSISTED REPRODUCTIVE TECHNOLOGIES AND CLINICAL EMBRYOLOGY

JP Medical Ltd Comprehensive guide to Assisted Reproductive Technologies (ART) and embryology with step by step descriptions of different types of ART. Includes DVD.

MANUAL OF ASSISTED REPRODUCTIVE TECHNOLOGIES AND CLINICAL EMBRYOLOGY

JAYPEE BROTHERS MEDICAL PUBLISHERS PVT. LTD. Manual of Assisted Reproductive Technologies and Clinical Embryology aims to discuss the relevance of science of reproductive biology in modern-day Assisted Reproductive Technologies and their practical

applications. The readers can learn and master the large number of sophisticated techniques which form the backbone of the fascinating and growing field of human assisted reproduction. The subject is vast and has been covered over 83 chapters. All the chapters are dealt by the experts of concerned fields. Principles and protocols pertaining to laboratory maintenance, culture media, cryofreezing of gametes, embryos, and genital tissues have been dealt with at length. This book is an invaluable reference book for the clinicians, reproductive biologists and embryologists.

A MANUAL OF MARINE AND MANGROVE FUNGI

DARSHAN PUBLISHERS This book is a manual of Marine and Mangrove fungi and is designed primarily for Post graduate students and Research scholars. There are currently a number of manual of Marine and Mangrove fungi around the world that explicitly or implicitly address the needs of identification of fungi.

SOIL SURVEY FIELD AND LABORATORY METHODS MANUAL - SOIL SURVEY INVESTIGATIONS REPORT NO. 51 (VERSION 2) ISSUED 2014

Lulu.com Field and laboratory data are critical to the understanding of the properties and genesis of a single pedon, as well as to the understanding of fundamental soil relationships based on many observations of a large number of soils. Key to the advancement of this body of knowledge has been the cumulative effort of several generations of scientists in developing methods, designing and developing analytical databases, and investigating soil relationships based on these data. Methods development result from a broad knowledge of soils, encompassing topical areas of pedology, geomorphology, micromorphology, physics, chemistry, mineralogy, biology, and field and laboratory sample collection and preparation. The purpose of this manual, the ?Soil Survey Field and Laboratory Methods Manual, Soil Survey Investigations Report (SSIR) No. 51, ? is to (1) serve as a standard reference in the description of site and soils sampling strategies and assessment techniques and (2) provide..

MANUAL OF CYTOGENETICS IN REPRODUCTIVE BIOLOGY

JP Medical Ltd Examines the diagnostic role of cytogenetics in improving the outcome of assisted reproductive technologies (ART). Covers basics of genetics, followed by investigative cytogenetics, applied cytogenetics, recent advances, preimplantation and prenatal cytogenetics.

MANUAL OF BLOOD PLATELETS: MORPHOLOGY, PHYSIOLOGY AND PHARMACOLOGY

Jaypee Brothers Medical Publishers Platelets are tiny blood cells that help the body form clots to stop bleeding. Antiplatelet medications, such as aspirin and clopidogrel, are commonly used to thin the blood which limits clotting and reduces the risk of heart attack. This book is a comprehensive guide to blood platelets for haematologists. Beginning with discussion on platelet structure, morphology, function and physiology, the next chapters cover the role of calcium in platelet activation and calcium modulation by cyclic nucleotides. The following sections explain the pharmacology of antiplatelet drugs, antiplatelet therapies, aspirin resistance, and the association of diabetes mellitus with major platelet dysfunction. The book concludes with chapters on acute coronary problems, interaction between endothelial cells and platelets, and blood biocompatibility studies. Authored by a Minneapolis-based expert in the field, the text is further enhanced by clinical photographs, diagrams and tables. Key points Comprehensive guide to blood platelets for haematologists Extensive coverage of antiplatelet drugs and resistance Recognised author from University of Minnesota Highly illustrated with clinical photographs, diagrams and tables

DIGITAL TWINS IN MANUFACTURING

VIRTUAL AND PHYSICAL TWINS FOR ADVANCED MANUFACTURING

Springer Nature

PROSPECTS AND APPLICATIONS FOR PLANT-ASSOCIATED MICROBES, A LABORATORY MANUAL

PART B: FUNGI

Seppo Sorvari Plant-associated microbes are ubiquitous organisms living in a range of interactions with their host. Involving two organisms, research and applications of plant microbes are challenging and often require specific skills. This book guides the reader in the word of plant-associated fungi, giving both theoretical and practical insight on the potential of this interaction in biotechnology. Detailed instructions and step-by-step protocols are described for isolation, identification, localization and community analysis of fungi, studies on their bioactivity, molecular plant-fungal interactions, and development of fungi as tools for biotechnology.

THE ERA OF ASSISTED REPRODUCTIVE TECHNOLOGIES TAILORED TO THE SPECIFIC NECESSITIES OF SPECIES, INDUSTRY AND CASE REPORTS

MDPI Nowadays, assisted reproductive technologies (ARTs) have a pivotal role not only in achieving fertilization in subfertile animals, but they are also involved in the management of the herd, decreasing disease spread and even allowing offspring sex selection. Nonetheless, there are differences between species or even within species that have led researchers worldwide to focus on those differences in order to bypass these specific difficulties. This Special Issue, titled “The Era of Assisted Reproductive Technologies Tailored to the Specific Necessities of Species, Industry and Case Reports” and published in Animals, is composed of 12 original manuscripts and three reviews that offer an overview of current and future ARTs used to improve reproductive outcomes, mainly focused on farm animals, such as horse, pig, bovine, rabbit and ovine species. Thus, the Special Issue covers information from the classical point of view, including comparative studies of different semen extenders, to the most advanced technologies of sperm selection by thermotaxis or chemoattractants, as well as the improvement of sperm features by red light irradiation. The female and

embryo contributions to ART outcomes are also covered, for instance, with a study that improves our knowledge by the metabolomic description of follicular fluid composition or the description of better culture conditions of oocytes. In brief, this Special Issue provides a balanced overview of emerging techniques and technologies used to preserve, improve, rescue or even create fertility for domestic farm animals with high economic impact.

A PRACTICAL MANUAL FOR MUSCULOSKELETAL RESEARCH

World Scientific This manual provides technical protocols for musculoskeletal research on a translational basis, i.e. a disease-orientated approach. It offers guidance on various laboratory techniques, including cell culture and molecular biology, histology and histomorphometry, microscopy and bioimaging, laboratory animal models, CT- and MRI-based densitometry and microarchitectural analysis, biomechanics and functional analysis of orthopedic kinesiology, etc. The content is simple and straightforward, with illustrations and step-by-step procedures as an easy experimental reference for personnel in basic and clinical musculoskeletal research and education. This book will provide a unique multidisciplinary platform for various professions — not only orthopedics, but also biomedical engineering and biomaterial sciences — involving both basic and clinical medicine.

THE HASSELBLAD MANUAL

Taylor & Francis Readers will discover Hasselblad's enormous potential and its comprehensive range of lenses and accessories. Presented in an easily accessible format, this book shows not only the working and manipulation of individual cameras, but also provides insight into the ways in which these superb cameras and their ancillary equipment may be best utilized to create professional quality images. Detailed illustrations of the system dissect the equipment to show how it functions. The Hasselblad Manual also includes 80 photographs from well-known photographers, illustrating a variety of photographic techniques using a Hasselblad Camera. * Covers new H1 camera system, new XPan II camera, new information about all V system cameras such as 905SWC, the El and 200 camera models * Explains flash and close-up photography, digital imaging, effective use and operation of lenses. * Shows the operation and best application of the different cameras for producing high quality images in different situations

MICROTUBULES: IN VIVO

Academic Press Microtubules: in vivo includes chapters by experts around the world on many aspects of microtubule imaging in living and fixed cells; assays to study microtubule function in a wide array of model organisms and cultured cells; high resolution approaches to study of the cytoskeleton. The authors share their years of experience, outlining potential pitfalls and critical factors to consider in experimental design, experimental implementation and data interpretation. Includes chapters by experts around the world on many aspects of microtubule imaging in living and fixed cells; assays to study microtubule function in a wide array of model organisms and cultured cells; high resolution approaches to study of the cytoskeleton The authors share their years of experience, outlining potential pitfalls and critical factors to consider in experimental design, experimental implementation and data interpretation

HUMAN STEM CELL MANUAL

A LABORATORY GUIDE

Elsevier Stem cells are self-replicating and undifferentiated, meaning their function is not yet cell, tissue, or organ-specific. Due to the unique nature of these cells, research into their biology and function holds great promise for therapeutic applications through replacement or repair of diseased and damaged cells. This reader-friendly manual provides a practical "hands on" guide to the culture of human embryonic and somatic stem cells. By presenting methods for embryonic and adult lines side-by-side, the authors lay out an elegant and unique path to understanding the science of stem cell practice. The authors begin with a broad-based introduction to the field, and also review legal and regulatory issues and patents. Each experimental strategy is presented with an historical introduction, detailed method, discussion of alternative methods, and common pitfalls. This lab guide for researchers also serves as a textbook for undergraduate and graduate students in laboratory courses.

CONFOCAL MICROSCOPY FOR BIOLOGISTS

Springer Science & Business Media There has been a great upsurge in interest in light microscopy in recent years due to the advent of a number of significant advances in microscopy, one of the most important of which is confocal microscopy. Confocal microscopy has now become an important research tool, with a large number of new fluorescent dyes becoming available in the past few years, for probing your pet structure or molecule within fixed or living cell or tissue sampies. Many of the people interested in using confocal microscopy to further their research do not have a background in microscopy or even cell biology and so not only do they find considerable difficulty in obtaining satisfactory results with a confocal microscope, but they may be mislead by how data is being presented. This book is intended to teach you the basic concepts ofmicroscopy, fluorescence, digital imaging and the principles of confocal microscopy so that you may take full advantage ofthe excellent confocal microscopes now available. This book is also an excellent reference source for information related to confocal microscopy for both beginners and the more advanced users. For example, do you need to know the optimal pinhole size for a 63x 1. 4 NA lens? Do you need to know the fluorescence emission spectrum of Alexa 568? Access to the wealth of practical information in this book is made easier by using both the detailed index and the extensive glossary.

FUNDAMENTALS OF URINE AND BODY FLUID ANALYSIS - E-BOOK

Elsevier Health Sciences Learn how to accurately analyze urine and body fluids with Fundamentals of Urine and Body Fluid Analysis, 5th Edition. Known for its clear writing style, logical organization, and vivid full-color illustrations, this renowned text offers the perfect level and depth of information for understanding the fundamental principles of urine and body fluids frequently encountered in the clinical laboratory. This includes the collection and analysis of urine, fecal specimens, vaginal secretions, and other

body fluids such as cerebrospinal, synovial, seminal, amniotic, pleural, pericardial, and peritoneal fluids. Author Nancy Brunzel also shares her extensive knowledge and expertise in the field as she highlights key information and walks you through essential techniques and procedures — showing you how to correlate data with your knowledge of basic anatomy and physiology in order to understand pathologic processes. Study questions and case studies in each chapter reinforce comprehension and application, with an answer key located in the back of the book. UNIQUE! Table of crystal images based on shape serves as a single, comprehensive guide to the identification of crystals in urine sediment. UNIQUE! Image Gallery of Urine Sediment provides alternate views of sediment components to augment the numerous classic photomicrographs already present in the Microscopic Examination of Urine chapter. UNIQUE! Quick Guides to urine and body fluid photomicrographs make it fast and easy to find a photo of a specific cell type or component of interest. UNIQUE! Tables with high quality polarizing microscopy photomicrographs demonstrate the differences in birefringent intensity of substances with and without a red compensator. The most complete collection of high-quality, full-color images enables optimal identification of microscopic components in urine and other body fluids. NEW! Fully updated content provides valuable information on the latest techniques and advances in the field. NEW! Enhanced content, new tables, and new images facilitate the microscopic differentiation of monocytes, macrophages, and mesothelial cells in pleural, peritoneal, and pericardial fluids. NEW! More than 250 photomicrographs of cells and other components in body fluid and urine sediment serve as a visual quick reference for identification during analysis. NEW! Thumbprint images embedded in numerous tables enhance learning and serve as an invaluable resource when performing fluid analysis at the bench.

PROSPECTS AND APPLICATIONS FOR PLANT-ASSOCIATED MICROBES, A LABORATORY MANUAL

PART A: BACTERIA

Seppo Sorvari Research on the microbial colonization of the aerial and subterranean tissues of plants has shown an extensive scale of interactions between the hosts and a range of microbes, including bacteria and fungi. Intercellular spaces, vascular systems and even single cells can be inhabited by these endophytic microbes. Of the bacterial endophytes, only a small percentage is harmful to the plant; most are neutral, opportunistic or beneficial. These plant-based bacteria can have various important functions throughout the life cycle of the plant; some promote plant growth and development, others protect the plant from diseases. This ability to be able to protect plants from diseases has catalyzed numerous laboratories to search for new bacteria that could be utilized instead of the traditional plant-protective agents. Because two or more interacting organisms are involved, research and the eventual application of suitable bio-controlling microbes are challenging and often require specific skills and equipment. The purpose of this book is to provide a comprehensive review for those who are interested in the research and biotechnological applications of plant-associated bacteria. It also provides a compilation of current work conducted on plant-bacteria interactions.

PLANT TISSUE CULTURE MANUAL - SUPPLEMENT 5

Springer This manual comprises a broad range of techniques of value to research workers in the fields of cell and molecular biology, physiology, plant breeding and propagation, and genetic engineering.

MICROSURGERY MANUAL FOR MEDICAL STUDENTS AND RESIDENTS

A STEP-BY-STEP APPROACH

Springer Nature This book provides a practically applicable guide on how to develop essential microsurgery skills and successfully perform a range of procedures. Emphasis is placed within each chapter on equipping the reader with the necessary information to enable them to develop a strong foundational knowledge of every technique covered with clear step-by-step guides on how to perform a range of methodologies. Helpful tips are provided on how to avoid common pitfalls and enhance skill acquisition. Accompanying video material also reinforces the key points detailed. Topics covered include how to develop skills utilizing the porcine model of flap harvesting along with the use of animal models for techniques such as vascular anastomoses, anesthesia, and exposure of relevant recipient vessels. Microsurgery Manual for Medical Students and Residents is a detailed resource on how to acquire core microsurgery skills, making it an ideal resource for medical students and trainees seeking a resource on how to further develop their skills.

MICROTUBULE PROTOCOLS

Springer Science & Business Media Microtubules are essential components of the cytoskeleton, and play critical roles in a variety of cell processes, including cell shaping, intracellular tracking, cell division, and cell migration. Microtubule Protocols presents a comprehensive collection of essential and up-to-date methods for studying both the biology of microtubules and the mechanisms of action of microtubule-interacting drugs. The straightforward presentation of readily reproducible protocols is a hallmark of the Methods in Molecular MedicineTM series, and is evident in this volume. Methods presented range from the purification and characterization of microtubule proteins, analysis of post-translational modifications of tubulin, and determination of microtubule structure, to the visualization of microtubule and spindle behavior, measurement of microtubule dynamics, and examination of microtubule-mediated cellular processes. Both basic scientists and clinical researchers will benefit from this collection of state-of-the-art protocols for microtubule research.

CELL BIOLOGICAL APPLICATIONS OF CONFOCAL MICROSCOPY

Elsevier This volume of the acclaimed Methods in Cell Biology series provides specific examples of applications of confocal microscopy to cell biological problems. It is an essential guide for students and scientists in cell biology, neuroscience, and many other areas of biological and biomedical research, as well as research directors and technical staff of microscopy and imaging facilities. An integrated and up-to-date coverage on the many various techniques and uses of the confocal microscope (CM). Includes detailed protocols accessible to new users Details how to set up and run a "Confocal Microscope Core Facility" Contains over 170 figures

MOODY'S INTERNATIONAL MANUAL

PRACTICAL FORENSIC MICROSCOPY

A LABORATORY MANUAL

John Wiley & Sons Forensic Microscopy: A Laboratory Manual will provide the student with a practical overview and understanding of the various microscopes and microscopic techniques employed within the field of forensic science. Each laboratory experiment has been carefully designed to cover the variety of evidence disciplines within the forensic science field with carefully set out objectives, explanations of each topic and worksheets to help students compile and analyse their results. The emphasis is placed on the practical aspects of the analysis to enrich student understanding through hands on experience. The experiments move from basic through to specialised and have been developed to cover a variety of evidence disciplines within forensic science field. The emphasis is placed on techniques currently used by trace examiners. This unique, forensic focused, microscopy laboratory manual provides objectives for each topic covered with experiments designed to reinforce what has been learnt along with end of chapter questions, report requirements and numerous references for further reading. Impression evidence such as fingerprints, shoe tread patterns, tool marks and firearms will be analysed using simple stereomicroscopic techniques. Body fluids drug and trace evidence (e.g. paint glass hair fibre) will be covered by a variety of microscopes and specialized microscopic techniques.

MANUAL OF ANTISENSE METHODOLOGY

Springer Science & Business Media In the past few years, antisense methodology has moved from in vitro studies to in vivo studies and first human trials. While the basic concept of antisense technology is simple, the methodological problems associated with its use are numerous and complex. Antisense- based methods have proven to be a field of research where careful attention to experimental protocols and appropriate controls is necessary. The Manual of Antisense Methodology emphasizes the application of antisense oligonucleotides, and is a guide for the identification of antisense and non-antisense effects in different experimental settings. The work is organized into three sections: antisense application in vitro, antisense application in vivo (animal models) and finally, clinical antisense studies. Where at all possible, the methods are described in sufficient detail to allow reproduction of a given experiment. The Manual of Antisense Methodology will be of interest to researchers in immunology, cancer research, pharmacology and internal medicine; and physicians conducting clinical studies in these fields.

VIDEO MICROSCOPY

Academic Press Video microscopy is used extensively in many life and biomedical science disciplines today, and is a useful tool for both cell biologists and students. This book presents how to track the dynamic changes that take place in the structure of living cells and in reconstituted preparations using video and digital imaging microscopy. Basic information, principles, and applications are also covered, as well as more specialized video microscopy techniques. Practical laboratory guide for methods and technologies used with video microscopy Comprehensive, easy-to-follow instructions February 1998, c. 334 pp.

IMMUNOLOGY METHODS MANUAL: EXPRESSION OF RECOMBINANT PROTEINS

MANUAL FOR OTO 3.0 AND OPS PROGRAMS FOR READING DAILY INCREMENTS

NANOBIOTECHNOLOGY PROTOCOLS

Springer Science & Business Media Hands-on experts in nanomaterial synthesis and application describe in detail the key experimental techniques currently employed in novel materials synthesis, dynamic cellular imaging, and biological assays. The author's emphasize diverse strategies to synthesize and functionalize the use of nanoparticles for biological applications. Additional chapters focus on the use of biological components (peptides, antibodies, and DNA) to synthesize and organize nanoparticles to be used a building block in larger assemblies. These new materials make it possible to image cellular processes for longer durations, leading to high throughput cellular-based screens for drug discovery, drug delivery, and diagnostic applications. Highlights include overview chapters on quantum dots and DNA nanotechnology, and cutting-edge techniques in the emerging nanobiotachnology arena.

DIGITAL MICROSCOPY

Academic Press The previous edition of this book marked the shift in technology from video to digital camera use with microscope use in biological science. This new edition presents some of the optical fundamentals needed to provide a quality image to the digital camera. Specifically, it covers the fundamental geometric optics of finite- and infinity-corrected microscopes, develops the concepts of physical optics and Abbe s theory of image formation, presents the principles of Kohler illumination, and finally reviews the fundamentals of fluorescence and fluorescence microscopy. The second group of chapters deals with digital and video fundamentals: how digital and video cameras work, how to coordinate cameras with microscopes, how to deal with digital data, the fundamentals of image processing, and low light level cameras. The third group of chapters address some specialized areas of microscopy that allow sophisticated measurements of events in living cells that are below the optical limits of resolution. Expands coverage to include discussion of confocal microscopy not found in the previous edition Includes "traps and pitfalls" as well as laboratory exercises to help illustrate methods