Culture Of Animal Cells A Manual Of Basic Technique

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Animal Cell Biotechnology Wiley-Liss
Animal Cell Technology: from Biopharmaceuticals to Gene Therapy provides a comprehensive insight into biological and engineering concepts related to mammalian and insect cell technology, as well as an overview of the applications of animal cell technology. Part 1 of the book covers the Fundamentals upon which this technology is based and covers the science underpinning the technology. Part 2 covers the Applications from the production of therapeutic proteins to gene therapy. The authors of the chapters are internationally-recognized in the field of animal cell culture research and have extensive experience in the areas covered in their respective chapters.

Bioreactors John Wiley & Sons
Animal Cell Culture is intended to fill any gaps in theoretical background of students of Biotechnology. The book, written after full laboratory exposure and experience will help updating the concepts in animal biotechnology and in developing ideas and concepts about the subject. New topics like method of transaction, transgenic animals, Bioforming, In-vitro fertilization, gene therapy delivery vehicle have been discussed in detail.

Culture of Animal Cells John Wiley & Sons
Animal cell technology is a discipline of growing importance, which aims not merely at understanding structure, function and behaviour of differentiated animal cells, but especially at the development of their abilities useful for clinical application.

Topics of interest in this regard include: viral vaccines, pharmaceutical proteins and novel applications such as gene therapy and organ culture. Undoubtedly, these Proceedings of the joint Meeting of the European Society for Animal Cell Technology and the Japanese Association for Animal Cell Technology (Veldhoven, The Netherlands, September 1994) review the most recent status of the field, and will be most valuable to anyone actively involved in the culture of animal cells and its applications. The contributions to this volume were strictly selected on the basis of quality and novelty of contents. Kluwer is honoured to be able to add this work to its strongly developing publication programme in cell and tissue culture, which now has its connections to all major Societies in this field worldwide. Audience: Cell biologists, biochemists, molecular biologists, immunologists, virologists and all other disciplines related to animal cell technology, working in an academic environment, as well as in (biotechnology or pharmaceutical) industry.

Animal Cell Culture Universities Press

Animal Cell Technology: from Biopharmaceuticals to Gene Therapy provides a comprehensive insight into biological and engineering concepts related to mammalian and insect cell technology, as well as an overview of the applications of animal cell technology. Part 1 of the book covers the Fundamentals upon which this technology is based and covers the science underpinning the technology. Part 2 covers the Applications from the production of therapeutic proteins to gene therapy. The authors of the chapters are internationally-recognized in the field of animal cell culture research and have extensive experience in the areas covered in their respective chapters.

Animal Cell Culture CRC Press

Modern Approaches to Animal Cell Technology is a collection of papers presented at the 1987 joint European Society for Animal Cell Technology-OHOLO conference held in Tiberias, Israel. Contributors explore modern approaches to animal cell technology and discuss the construction of the animal cell substrate, the physiology of those cells in a bioreactor type of environment, and the ways in which different products can be made from animal cells in culture and tested. This book is comprised of 59 chapters divided into nine sections and begins by outlining the history of issues and decisions that were made regarding the acceptability of various cell substrates, along with the use of continuous cell lines in biotechnology. The next chapter explores the feasibility, reproducibility, and the sensitivity of the dot-blot filter hybridization test to detect minute amounts of residual cellular DNA. The reader is then introduced to cells and cell lines such as monoclonal antibodies; cell growth and development; physiology of cells; and the use of bioreactors for culturing animal cells. Downstream unit processes, vaccines, immune system products, and toxicity testing with animal cells are also considered. This monograph will be a valuable resource for animal-cell technologists, biotechnologists, and microbiologists.

Principles and Practice of Animal Tissue Culture (Second Edition) Wiley-Blackwell

Production of Biologicals from Animal Cells in Culture reviews the state of the art in animal cell biotechnology, with emphasis on the sequence of events that occur when generating a biological from animal cells in culture. Methods that enable adjustment of nutrient feed streams into perfusion bioreactors so as to increase productivity are

described. A number of issues are also addressed, such as the usefulness of the fingerprint method for cell characterization. Comprised of 135 chapters, this book begins with an overview of the problems and benefits of animal cell culture, followed by a discussion on the isolation of immortal murine macrophage cell lines. The reader is systematically introduced to the use of DNA fingerprinting to characterize cell banks; immortalization of cells with oncogenes; lipid metabolism of animal cells in culture; and energetics of glutaminolysis. Subsequent chapters explore serum-free and protein-free media; the physiology of animal cells; gene expression in animal cell systems; and animal cell bioreactors. The monitoring and assay of animal cell parameters are also considered, along with downstream processing and regulatory issues. This monograph will be of interest to students, practitioners, and investigators in the fields of microbiology and biotechnology.

Animal Cell Culture MJP Publisher

Because of their complexity, the new generation of genetically engineered protein drugs can only be made by biotechnological methods, using cultures of animal cells. This book covers all aspects of the technologies needed to turn animal cells into an acceptable and cost-effective tool for drug production. This includes modifying them genetically so that they produce the right product in high yield, getting them to grow reproducibly on an industrial scale, and extracting the required product from them. It also covers biological safety issues, and the verification of the chemical and biological nature of the protein drug produced. The work covers developments in all of these areas and how they all need to be integrated for the design of an effective biotechnological production process. It therefore provides a comprehensive guide to this area of biotechnology.

Culture of Animal Cells Set Wiley-Liss

Animal cell culture is an important laboratory technique in the biological and medical sciences. It has become an essential tool for the study of most biochemical and physiological processes and the use of large-scale animal cell culture has become increasingly important to the commercial production of specific compounds for the pharmaceutical industry. This book describes the basic requirements for establishing and maintaining cell cultures both in the laboratory and in large-scale operations. Minimal background knowledge of the subject is assumed and therefore it will be a readable introduction to animal cell culture for undergraduates, graduates and experienced researchers. Reflecting the latest developments and trends in the field, the new topics include the latest theory of the biological clock of cell lines, the development of improved serum-free media formulations, the increased understanding of the importance and control of protein glycosylation, and the humanization of antibodies for therapeutic use.

Animal Cell Culture Oxford University Press, USA

Animal Cell Bioreactors provides an introduction to the underlying principles and strategies in the in vitro cell culture biotechnology. It addresses engineering aspects such as mass transfer, instrumentation, and control ensuring successful design and operation of animal cell bioreactors. The goal is to provide a comprehensive analysis and review in the advancement of the bioreactor systems for large-scale animal cell cultures. The book is organized into four parts. Part I traces the historical development of animal cell biotechnology. It presents examples of work in progress that seeks to make animal cell biotechnology processes as productive on a cost per unit of product basis as that achieved by other microbial systems. Part II includes chapters dealing with the implications of cell biology in animal cell

biotechnology; protein-bound oligosaccharides and their structures; the development of serum-free media and its use in the production of biologically active substances; and the metabolism of mammalian cells. Part III focuses on animal cell cultivation, covering topics such as the fixed bed immobilized culture; three-dimensional microcarriers; and hydrodynamic phenomena in microcarrier cultures. Part IV discusses the design, operation, and control of animal cell bioreactors.

Animal Cell Biotechnology Springer Science & Business Media

This updated and expanded edition of a classic text allows novices and experienced researchers alike to apply both basic and sophisticated techniques of tissue culture. Coverage helps readers assess the role of cell cultures as models for in vivo processes, while expanded descriptions of protocols in areas of new technology and descriptions of improved serum-free media enables them to perform a wide range of specialized procedures without conducting additional research. New to this edition is coverage of induction of differentiation, the transformed phenotype, cytotoxicity and viability assays, culture of tumor tissue from animals and humans, and three-dimensional culture systems, including organotypic and histotypic cultures. Also includes a glossary, an international list of cell banks, an extensive listing of reagents and commercial suppliers, and over 600 literature references.

Animal Cell Culture Techniques John Wiley & Sons

Cell and tissues culture has been one of the first and foremost techniques paving for recent cutting-edge technologies such as vaccinology, monoclonal antibody production, therapeutic cloning, stem cell technology, etc. It has played a substantial role in the developments of health care and prophylactics industries, thus serving the mankind. It has made the dream of producing cost-effective prophylactics, diagnostics and therapeutics come true and affordable. In the recent past, with the explosion of knowledge in the field of biotechnology, intensive research in being carried out, where undergraduate and post-graduate courses are being offered in this field. Even through more emphasis is being given to theory, a dearth of practical knowledge is lacking due to paucity of established tissue culture facilities.

Culture of Animals Cells John Wiley & Sons

Scientists with long-refined expertise describe cutting-edge techniques for the production of therapeutic proteins and vaccines. Capturing the major advances that have occurred in both the science and the technology of these biopharmaceuticals, this important book covers the powerful new techniques used in genetically manipulating animal cells, optimizing their growth in defined media (particularly at large-scale), avoiding contamination, and in the harvesting and analysis of cell products. Topics include basic culture facilities and methods; molecular methods for gene transfection, cell immortalization and cell fusion; and techniques for the study of cell growth, viability, metabolism, and productivity. Animal Cell Biotechnology constitutes a comprehensive manual of state-of-the-art techniques for setting up a cell culture laboratory, maintaining cell lines, and optimizing critical parameters for cell culture.

Culture of Animal Cells Scientific e-Resources

Animal Cell Technology: Products of Today, Prospects for Tomorrow is a collection of papers that discusses the advancement and future of biotechnology. The book presents a total of 164 materials that are organized into 22 sections. The

coverage of the text includes the various methodologies involved in animal cell technology, such as post translational modifications; kinetics and modeling; and measurement and assay. The book also covers product safety and consistency testing; products from animal cells in culture; and apoptosis and cell biology. The text will be of great use to biologists, biotechnicians, and biological engineers. Readers who have an interest in the advancement of biotechnology will also benefit from the book.

Molecular Biology of The Cell Humana

Cell culture techniques allow a variety of molecular and cell biological questions to be addressed, offering physiological conditions whilst avoiding the use of laboratory animals. In addition to basic techniques, a wide range of specialised practical protocols covering the following areas are included: cell proliferation and death, in-vitro models for cell differentiation, in-vitro models for toxicology and pharmacology, industrial application of animal cell culture, genetic manipulation and analysis of human and animal cells in culture.

Culture of Animal Cells Set Taylor & Francis

This volume provides complete and thorough coverage of the classical and state-of-the-art methods used in cell culture. It also includes basic principles used in the selection of cells for specific scientific study, as well as analytical and procedural techniques. Key Features * Reviews basic principles of cell culture * Gives options and techniques on how to look at cells

General Techniques of Cell Culture Wiley-Liss

Cell culture refers to the removal of cells from an animal or plant and their subsequent growth in a favourable artificial environment. The cells may be removed from the tissue directly and disaggregated by enzymatic or mechanical means before cultivation, or they may be derived from a cell line or cell strain that has already been established. Stem cells retain the capacity to self renew as well as to produce progeny with a restricted mitotic potential and restricted range of distinct types of differentiated cell they give rise to. The formation of blood cells, also called haematopoiesis, is the classical example of concept of stem cells. Animal cell and tissue culture is an integral part of biotechnology and this book covers all the aspects of animal cell culture. Animal cells are used for making new vaccines, specific animal proteins such as intergerons, blood factors and hormones, monoclonal antibodies for use as diagnostic and therapeutics, gene probes as diagnostic too, enzymes and last but not the least many new and important compounds. This book contains eleven Chapters, which deal with historic developments, laboratory design, sterilization procedures and various facets of animal cell culture. This includes preservation, characterizations, storage and transport of cells, their monitoring and technologies for cell banking.

Modern Approaches to Animal Cell Technology Wiley-Liss

This new edition of Animal Cell Culture covers new or updated chapters on cell authentication, serum-free culture, apoptosis assays, FISH, genetic modification, scale-up, stem cell assays, 3-dimensional culture, tissue engineering and cytotoxicity assays. Detailed protocols for a wide variety of methods provide the core of each chapter, making new methodology easily accessible. Everyone working in biological and medical research, whether in academia or a commercial organization, practising cell culture will benefit greatly from this book.

Freshney's Culture of Animal Cells Cambridge University Press

FRESHNEY’S CULTURE OF ANIMAL CELLS THE NEW EDITION OF THE LEADING TEXT ON THE BASIC METHODOLOGY OF CELL CULTURE, FULLY UPDATED TO REFLECT NEW APPLICATIONS INCLUDING IPSCS, CRISPR, AND ORGAN-ON-CHIP

TECHNOLOGIES Freshney's Culture of Animal Cells is the most comprehensive and up-to-date resource on the principles, techniques, equipment, and applications in the field of cell and tissue culture. Explaining both how to do tissue culture and why a technique is done in a particular way, this classic text covers the biology of cultured cells, how to select media and substrates, regulatory requirements, laboratory protocols, aseptic technique, experimental manipulation of animal cells, and much more. The eighth edition contains extensively revised material that reflects the latest techniques and emerging applications in cell culture, such as the use of CRISPR/Cas9 for gene editing and the adoption of chemically defined conditions for stem cell culture. A brand-new chapter examines the origin and evolution of cell lines, joined by a dedicated chapter on irreproducible research, its causes, and the importance of reproducibility and good cell culture practice. Throughout the book, updated chapters and protocols cover topics including live-cell imaging, 3D culture, scale-up and automation, microfluidics, high-throughput screening, and toxicity testing. This landmark text: Provides comprehensive single-volume coverage of basic skills and protocols, specialized techniques and applications, and new and emerging developments in the field Covers every essential area of animal cell culture, including lab design, disaster and contingency planning, safety, bioethics, media preparation, primary culture, mycoplasma and authentication testing, cell line characterization and cryopreservation, training, and troubleshooting Features a wealth of new content including protocols for gene delivery, iPSC generation and culture, and tumor spheroid formation Includes an updated and expanded companion website containing figures, artwork, and supplementary protocols to download and print The eighth edition of Freshney's Culture of Animal Cells is an indispensable volume for anyone involved in the field, including undergraduate and graduate students, clinical and biopharmaceutical researchers, bioengineers, academic research scientists, and managers, technicians, and trainees working in cell biology, molecular biology, and genetics laboratories.

Culture of Animal Cells Jones & Bartlett Publishers

Animal cell culture is an important laboratory technique in the biological and medical sciences. It has become an essential tool for the study of most biochemical and physiological processes and the use of large-scale animal cell culture has become increasingly important to the commercial production of specific compounds for the pharmaceutical industry. This book describes the basic requirements for establishing and maintaining cell cultures both in the laboratory and in large-scale operations. Minimal background knowledge of the subject is assumed and therefore it will be a readable introduction to animal cell culture for undergraduates, graduates and experienced researchers. Reflecting the latest developments and trends in the field, the new topics include the latest theory of the biological clock of cell lines, the development of improved serum-free media formulations, the increased understanding of the importance and control of protein glycosylation, and the humanization of antibodies for therapeutic use.

Culture of Animal Cells Humana Press

This is a comprehensive research guide that describes both the key new techniques and more established methods. Every chapter discusses the merits and limitations of the various approaches and then provides selected tried-and-tested protocols, as well as a plethora of good practical advice, for immediate use at the bench. It presents the most accessible and comprehensive introduction available to the culture and experimental manipulation of animal cells. Detailed protocols for a wide variety of methods provide the core of each chapter, making new methodology easily accessible. This book is an essential laboratory manual for all undergraduates and graduates about to embark on a cell culture project. It is a book which both experienced researchers and those new to the field will find invaluable.