Crystal Violet Cell Colony Staining Potts Lab

As a group of organisms that are too small to see and best known for being agents of disease and death, microbes are not always appreciated for the numerous supportive and positive contributions they make to the living world. Designed to support a course in microbiology, Microbiology: A Laboratory Experience permits a glimpse into both the good and the bad in the microscopic world. The laboratory experiences are designed to engage and support student interest in microbiology as a topic, field of study, and career. This text provides a series of laboratory exercises compatible with a one-semester undergraduate microbiology or bacteriology course with a three- or four-hour lab period that meets once or twice a week. The design of the lab manual conforms to the American Society for Microbiology curriculum guidelines and takes a ground-up approach -- beginning with an introduction to biosafety and containment practices and how to work with biological hazards. From there the course moves to basic but essential microscopy skills, aseptic technique and culture methods, and builds to include more advanced lab techniques. The exercises incorporate a semester-long investigative laboratory project designed to promote the sense of discovery and encourage student engagement. The curriculum is rigorous but manageable for a single semester and incorporates best practices in biology education.

It is a pleasure to contribute the foreword to Introduction to Cell and Tissue Culture: The ory and Techniques by Mather and Roberts. Despite the occasional appearance of thought ful works devoted to elementary or advanced cell culture methodology, a place remains for a comprehensive and definitive volume that can be used to advantage by both the novice and the expert in the field. In this book, Mather and Roberts present the relevant method ology within a conceptual framework of cell biology, genetics, nutrition, endocrinology, and physiology that renders technical cell culture information in a comprehensive, logical for mat. This allows topics to be presented with an emphasis on troubleshooting problems from a basis of understanding the underlying theory. The material is presented in a way that is adaptable to student use in formal courses; it also should be functional when used on a daily basis by professional cell culturists in a- demia and industry. The volume includes references to relevant Internet sites and other use ful sources of information. In addition to the fundamentals, attention is also given to mod ern applications and approaches to cell culture derivation, medium formulation, culture scale-up, and biotechnology, presented by scientists who are pioneers in these areas. With this volume, it should be possible to establish and maintain a cell culture laboratory devot ed to any of the many disciplines to which cell culture methodology is applicable.

"...a wonderful compendium of current in vitro approaches that willbe a useful resource to those just starting to work with anepithelial cell system as well as

those that have been working withthem for years and years." —Pharmaceutical Research This completely revised and expanded new edition providesdetailed descriptions of fundamental and practical aspects relatingto the in vitro cultivation of disparate types of epithelia. Inrecent years, the use of epithelial cell culture in cell biologyand tissue engineering has increased dramatically. This revisionreflects those advances by including new chapters on the culture ofanimal and human hepatocytes, kidney epithelium, and bladderepithelium. Each chapter provides an introductory review of theprinciples and advantages of the particular method, followed bydetailed protocols, practical tips, alternate methods, and a usefullist of materials and suppliers.

DNA Repair, Part A provides detailed coverage of modern methods for molecular analysis of enzymes and enzyme systems that function in the maintenance of genome integrity. Coverage areas include base excision repair, nucleotide excision repair, translesion DNA polymerases, mismatch repair, genetic recombination, and double strand break repair. A laboratory standard for more than 40 years Over 400 volumes strong Also available on ScienceDirect Part A of a 2-part series

There have been tremendous strides in cellular transplantation in recent years, leading to accepted practice for the treatment of certain diseases, and use for many others in trial phases. The long history of cellular transplantation, or the transfer of cells from one organism or region of the body to another, has been revolutionized by advances in stem cell research, as well

as developments in gene therapy. Cellular Transplants: From Lab to Clinic provides a thorough foundation of the basic science underpinning this exciting field, expert overviews of the state-of-the-art, and detailed description of clinical success stories to date, as well as insights into the road ahead. As highlighted by this timely and authoritative survey, scale-up technologies and whole organ transplantation are among the hurdles representing the next frontier. The contents are organized into four main sections, with the first covering basic biology, including transplant immunology, the use of immunosuppressive drugs, stem cell biology, and the development of donor animals for transplantation. The next part looks at peripheral and reconstructive applications, followed by a section devoted to transplantation for diseases of the central nervous system. The last part presents efforts to address the key challenges ahead, such as identifying novel transplantable cells and integrating biomaterials and nanotechnology with cell matrices. Provides detailed description of clinical trials in cell transplantation Review of current therapeutic approaches Coverage of the broad range of diseases addressed by cell therapeutics Discussion of stem cell biology and its role in transplantation

This volume provides descriptions of the occurrence of the UPR, methods used to assess it, pharmacological tools and other methodological approaches to analyze its impact on cellular regulation. The authors explain how these methods are able to provide important biological insights. This volume provides descriptions of the

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This edited reflects the current state of knowledge about the role of microRNAs in the formation and progression of solid tumours. The main focus lies on computational methods and applications, together with cutting edge experimental techniques that are used to approach all aspects of microRNA regulation in cancer. We are sure that the emergence of high-throughput quantitative techniques will make this integrative approach absolutely necessary in the near future. This book will be a resource for researchers starting out with cancer microRNA research, but is also intended for the experienced researcher who wants to incorporate concepts and tools from systems biology and bioinformatics into his work. Bioinformaticians and modellers are provided with a general perspective on microRNA biology in cancer, and the state-of-the-art in computational microRNA biology.

New discoveries in the field of stem cells increasingly dominate the news and scientific literature revealing an avalanche of new knowledge and research tools that are producing therapies for cancer, heart disease, diabetes, and a wide variety of other diseases that afflict humanity. The Handbook of Stem Cells integrates this exciting area of life science, combining in two volumes the requisites for a general understanding of adult and embryonic stem cells. Organized in two volumes entitled Pluripotent Stem

Cells and Cell Biology and Adult and Fetal Stem Cells, this work contains contributions from the world's experts in stem cell research to provide a description of the tools, methods, and experimental protocols needed to study and characterize stem cells and progenitor populations as well as a the latest information of what is known about each specific organ system. Provides comprehensive coverage on this highly topical subject Contains contributions by the foremost authorities and premiere names in the field of stem cell research Companion website - http://booksite.elsevier.com/9780123859426/ - contains over 250 color figures in presentation format It is pointed out that cancer stem cell is a cell type within a tumor that possesses the capacity of cell-renewal and can give rise to the heterogeneous lineages of cancer cells that comprise the tumor. It is emphasized that a cancer stem cell is a tumor initiating cell. That conventional chemotherapy kills most cells in a tumor, but cancer stem cells remain intact is discussed. Vast applications of stem cells, cancer stem cells, mesenchymal stem cells, and human pluripotent stem cells are discussed. Because human embryonic stem cells possess the potential of producing unlimited quantities of any human cell type, considerable focus is placed on their therapeutic potential in this volume. Because of the pluripotency of embryonic stem cells, this volume discusses various applications such as tissue engineering, regenerative medicine, pharmacological and toxicological uses. The role of these cells in cell differentiation is also included. The role of cancer stem cells of breast, colon, and melanoma tumors in response

to antitumor therapy is detailed. The role of cancer stem cells, specifically in the deadliest brain cancer, glioblastoma multiforme, is explained. Transplantation of bone marrow-derived stem cells for myocardial infarcation and use of mesenchymal stem cells in orthopedics are described.

In Gene Therapy of Cancer: Methods and Protocols, Wolfgang Walther and Ulrike Stein survey the rapidly evolving field cancer gene therapy and provide a broad array of leading-edge protocols for the delivery of therapeutic genes into tumors. Described in step-by-step fashion and enriched with each author's own practical tips, these readily reproducible methods are currently being widely applied in cancer gene therapy investigations, including immunotherapy and tumor vaccination, suicide gene therapy, antioncogene therapy, and antisense and ribozyme gene therapy. Representative strategies are provided for gene targeting and for viral or nonviral gene delivery in cancer therapy, as well as a significant number of clinical protocols for the development of novel cancer gene therapies. Gene Therapy of Cancer: Methods and Protocols offers basic and clinical researchers a broad ranging overview and collection of the most recent advances in gene transfer techniques. Written by leading international authorities, its readily reproducible, cutting-edge methods constitute today's most valuable tools for the study of cancer gene therapy in both the laboratory and clinical trials.

Comprehensive and highly practical, Viral Vectors for Gene Therapy provides researchers with the basic tools needed to design targeted gene delivery vectors, and

clinicians with an understanding of how to apply viral vectors to the treatment of genetic disorders. Offering detailed step-by-step instructions to ensure successful results, these experts detail the use of herpes viruses, adenoviruses, adeno-associated viruses, simple and complex retroviruses, including lentiviruses, and other virus systems for vector development and gene transfer. Additional chapters demonstrate the use of virus vectors in the brain and central nervous system.

Tumor microenvironment represents an extremely dynamic niche shaped by the interplay of different cell types (e.g. tumor cells, stromal cells), their soluble products (e.g.cytokines, chemokines and growth factors) and varied physico-chemical conditions (e.g low oxygen concentration or hypoxia). Recent studies have identified myelomonocytic cells as key players in regulating the tumor microenvironment and hence, tumor progression in a variety of cancers. In view of these findings, the present book attemps to provide a comprehensive account of the diversity of tumor microenvironment across different cancers and how myelomonocytic cells have taken the center-stage in regulating this niche to direct cancer progression. A better understanding of the myelomonocytic cells and the mechanisms by which they regulate cancer progression will open new vistas in cancer therapeutics.

This textbook covers many aspects of radiation, radiotherapy and their effects. It includes a discussion of recent advances, such as the molecular basis of cellular effects and cell radiosensitivity, radiocarcinogenesis and how radiotherapy can affect normal and neoplastic

tissues.

Atlas of Oral Microbiology provides a complete description of the oral microbial systems, illustrating them with a large variety of bacteria culture images and electron microscopy photos. This work is by far the most thorough and best illustrated oral microbiology atlas available. In addition, it also describes in detail a variety of experimental techniques, including microbiological isolation, culture and identification. This valuable reference book, with its strong practical function, will serve a broad audience, and meet the needs of researchers, clinicians, teachers and students who major in biology, microbiology, immunology and infectious diseases. This monograph will also facilitate teaching and international academic exchange. Brings together interdisciplinary research on microbiology, oral biology and infectious diseases Collects a large number of oral microbial pictures, providing the most abundantly illustrated oral microbiology atlas available Describes in detail, a variety of experimental techniques, including microbiological isolation, culture and identification Provides a complete update of already existing information, as well as the latest views on oral manifestations of infections

The participation of endothelial cells in various physiologic and pathologic processes has been hypothesized since before the turn of the century. However, until recently, direct evidence for endothelial involvement in these processes has been extremely difficult to obtain due to the inability to study endothelial cell function in vitro. Though the possibility of using

cultured endothelial cells to study endothelial cell function in vitro was recognized many years ago, the inability to culture unambiguously identifiable endothelial cells limited investigators in their studies of endothelial function. As a result, the field of endothelial cell biology lay relatively fallow for many years. The development in the early 1970's of routine and easily implemented methods for culturing human endothelial cells and the demonstration that cultured endothelial cells synthesized a physiologically relevant protein, Factor VIII/von Willebrand Factor, quickly changed this state of affairs. Over the following decade the scope of endothelial cell research rapidly widened, spreading in a number of directions. First, methods were developed to culture endothelial cells from a variety of species. Second, methods were developed to culture endothelial cells from different organs and types of blood vessels (arteries, veins, and capillaries) within a single species. Third, and most important, investigators began using cultured endothelial cells as tools to study the potential involvement of endothelial cells in a wide assortment of biologically interesting processes. The net result has been a tremendous increase in our understanding of endothelial cell function.

For this Special Issue book, ten papers focusing on novel bioactive molecules from different marine microorganisms, including fungi, cyanobacteria, actinobacteria and diatoms, were selected. The isolated biomolecules represent different structures and showed anticancer, antiviral, antifungal, antibacterial, anti-inflammatory and enzyme-inhibiting activities. One of the

papers is a review article on microviridins, a class of bioactive cyanobacterial peptides.

Recent advances in the understanding of the biological basis of pediatric soft-tissue and bone tumors, especially owing to the advent of “omics” technologies, have led to an exponential increase in the current knowledge on the genetic and cellular patho-mechanisms that drive these diseases. This offers the unprecedented opportunity to develop and implement targeted therapies such as monoclonal antibodies, small molecules, oncolytic viruses, and immunotherapies in standard and/or personalized treatment regimens. However, to date only a few examples document a successful translation of discoveries from the bench to the bedside. Recent international expert congresses further emphasize the urgent need for a more rapid and especially more successful translational process. Hence, we strongly believe that a Frontiers Research Topic aiming at this aspect would fit just in time and be relevant for a broad readership. This Frontiers Research Topic intended to provide a platform for active and interdisciplinary discussion, to summarize current state-of-the-art knowledge on all basic research and translational aspects in pediatric soft-tissue and bone tumors, and to offer new perspectives on how to further promote and accelerate the translational process. It comprises high-quality original articles and timely reviews.

This volume provides descriptions of the occurrence of the UPR, methods used to assess it, pharmacological tools and other methodological approaches to analyze its impact on cellular regulation. The authors explain how

these methods are able to provide important biological insights This volume provides descriptions of the occurrence of the UPR, methods used to assess it, pharmacological tools and other methodological approaches to analyze its impact on cellular regulation The authors explain how these methods are able to provide important biological insights

This volume describes easy to follow methods to guide both the novice and more experienced researcher seeking to use new techniques for the culture of cancer cells. The first section of the book introduces the rationale behind the selection of specific materials to help the reader choose culture conditions appropriate to their studies and the general techniques operating in many culture facilities. The second section covers the specific requirements of the individual cancer cell types for optimal growth and maintenance. A wide range of procedures encompassing many of the key functional features of cancer cells are then described in section three. These include assays to evaluate proliferation, viability, cytotoxicity, apoptosis, migration, invasion, and angiogenesis. Techniques of gene transfer and the development of drug resistance are also described. Finally the book concludes with methods of co-culture of different cell types.

Embracing the transformation of radiation sciences by the recent surge of developments in molecular biology, this progressive text offers an up-to-date analysis of in vitro and in vivo molecular responses in the body induced by ionizing radiation. With a unique emphasis on medical physics applications, Biomolecular Action of

Ionizing Radiation also presents a much needed, in-depth perspective on clinical applications for the treatment of cancer and radiation injuries. Based on a popular course given by the author at McGill University,the bookplaces the traditional tenets of radiation biology in the context of contemporary cell and molecular biology. Using terms that non-experts in molecular biology can understand, it clarifies the underlying mechanisms of radiation effects on molecular interactions including signal transduction pathways, modes of cell killing, and non-targeted effects. The author subsequently associates key principles and advances with potential applications, including the use of ionizing radiation as a cytotoxic and cytostatic agent, and radiosensitization by targeting molecular intermediates or signaling molecules involved in radiation-induced processes. Raising the standard for radiation biology texts that are currently available, Biomolecular Action of Ionizing Radiation is an outstanding resource for advanced undergraduate and graduate students in medical physics, radiation oncology, radiation biology, and those who have an interest in the radiation sciences and in cancer treatment.

This book is a printed edition of the Special Issue entitled “Anticancer Agents: Design, Synthesis and Evaluation” that was published in Molecules. Two review articles and thirty research papers are included in the Special Issue. Three second-generation androgen receptor antagonists that have been approved by the U.S. FDA for the treatment of prostate cancer have been reviewed. Identification of mimics of protein partners as protein-

protein interaction inhibitors via virtual screening has been summarized and discussed. Anticancer agents targeting various protein targets, including IGF-1R, Src, protein kinase, aromatase, HDAC, PARP, Toll-Like receptor, c-Met, PI3Kdelta, topoisomerase II, p53, and indoleamine 2,3-dioxygenase, have been explored. The analogs of three well-known tubulin-interacting natural products, paclitaxel, zampanolide, and colchicine, have been designed, synthesized, and evaluated. Several anticancer agents representing diverse chemical scaffolds were assessed in different kinds of cancer cell models. The capability of some anticancer agents to overcome the resistance to currently available drugs was also studied. In addition to looking into the in vitro ability of the anticancer agents to inhibit cancer cell proliferation, apoptosis, and cell cycle, in vivo antitumor efficacy in animal models and DFT were also investigated in some papers.

This four-volume laboratory manual contains comprehensive state-of-the-art protocols essential for research in the life sciences. Techniques are presented in a friendly step-by-step fashion, providing useful tips and potential pitfalls. The important steps and results are beautifully illustrated for further ease of use. This collection enables researchers at all stages of their careers to embark on basic biological problems using a variety of technologies and model systems. This thoroughly updated third edition contains 165 new articles in classical as well as rapidly emerging technologies. Topics covered include: * Cell and Tissue Culture: Associated Techniques, Viruses, Antibodies,

Immunocytochemistry (Volume 1) * Organelle and Cellular Structures, Assays (Volume 2) * Imaging Techniques, Electron Microscopy, Scanning Probe and Scanning Electron Microscopy, Microdissection, Tissue Arrays, Cytogenetics and In Situ Hybridization, Genomics and Transgenic Knockouts and Knock-down Methods (Volume 3) * Transfer of Macromolecules, Expression Systems, Gene Expression Profiling (Volume 4) * Indispensable bench companion for every life science laboratory * Provides the latest information on the plethora of technologies needed to tackle complex biological problems * Includes numerous illustrations, some in full color, supporting steps and results 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.
Proceedings of the 17th ESACT Meeting June 10-14, 2001, Tylösand, Sweden

This multivolume handbook presents the most authoritative and comprehensive reference work on major zoonoses of the world. The Handbook of Zoonoses covers most diseases communicable to humans, as well as those diseases common to both animals and humans. It identifies animal diseases that are host specific and reviews the effects of various human diseases on animals. Discussions address diseases that remain important public and animal health problems and the techniques that can control and prevent them. The chapters are written by internationally recognized scientists in their respective areas of disease, who work or have worked extensively in the most affected areas of the world. The emphasis for each zoonosis is on the epidemiology of the disease, the clinical syndromes and carrier states in infected animals and humans, and the most current methods for diagnosis and approaches to control. For infectious agents or biologic toxins, which may be transmitted by foods of animal origin, a strong focus is placed on food safety measures. The etiologic and therapeutic aspects of each disease important to epidemiology and control are identified.

As the world’s population ages, the problem of degenerative disease is increasing. At the same time, the demand for organ transplants to repair or replace damaged tissue continues to grow. Regenerative medicine is a branch of translational medicine which promotes the repair, regeneration, or construction of tissues and organs or improves or restores their function through tissue engineering, cell biology, molecular

biology and other techniques. Stem cells are one of the most important types of cells used in regenerative medicine, and stem cell research is also one of the most active research areas in the field. This book presents 20 full papers from the 8th International Symposium China-Europe “Stem Cells and Regenerative Medicine”, held in Wuhan, China from 19-21 June 2018. At this symposium, researchers in the field of stem cells and regenerative medicine from China and France discussed research from a molecular point of view and pointed out the clinical applications of mesenchymal stem cells, as well as the construction and applications of new biomaterials, the biomechanics of bone tissue engineering, and cellular immunotherapy, among other subjects. Stem cell technology could soon make possible the repair or replacement of aging and damaged tissue, as well as providing a treatment for genetic defects and malignancies,and this book will be of value to all those with an interest in regenerative medicine.

This multidisciplinary book provides up-to-date information on clinical approaches that combine stem or progenitor cells, biomaterials and scaffolds, growth factors, and other bioactive agents in order to offer improved treatment of urologic disorders including lower urinary tract dysfunction, urinary incontinence, neurogenic bladder, and erectile dysfunction. In providing clinicians and researchers with a broad perspective on the development of regenerative medicine technologies, it will assist in the dissemination of both regenerative medicine principles and a variety of exciting therapeutic options. After an opening section

addressing current developments and future perspectives in tissue engineering and regenerative medicine, fundamentals such as cell technologies, biomaterials, bioreactors, bioprinting, and decellularization are covered in detail. The remainder of the book is devoted to the description and evaluation of a range of cell and tissue applications, with individual chapters focusing on the kidney, bladder, urethra, urethral sphincter, and penis and testis.

First developed as an accessible abridgement of the successful Handbook of Stem Cells, Essentials of Stem Cell Biology serves the needs of the evolving population of scientists, researchers, practitioners and students that are embracing the latest advances in stem cells. Representing the combined effort of seven editors and more than 200 scholars and scientists whose pioneering work has defined our understanding of stem cells, this book combines the prerequisites for a general understanding of adult and embryonic stem cells with a presentation by the world's experts of the latest research information about specific organ systems. From basic biology/mechanisms, early development, ectoderm, mesoderm, endoderm, methods to application of stem cells to specific human diseases, regulation and ethics, and patient perspectives, no topic in the field of stem cells is left uncovered. Selected for inclusion in Doody's Core Titles 2013, an essential collection development tool for health sciences libraries Contributions by Nobel Laureates and leading international investigators Includes two entirely new chapters devoted exclusively to induced pluripotent stem (iPS) cells written by the

scientists who made the breakthrough Edited by a world-renowned author and researcher to present a complete story of stem cells in research, in application, and as the subject of political debate Presented in full color with glossary, highlighted terms, and bibliographic entries replacing references

Cancer is the leading cause of death in most countries and its consequences result in huge economic, social and psychological burden. Breast cancer is the most frequently diagnosed cancer type and the leading cause of cancer death among females. In this book, we discussed various therapeutic modalities from signaling pathways through various anti-tumor compounds as well as herbal medicine for this deadly cancer. We hope that this book will contribute to the development of novel diagnostic as well as therapeutic approaches.

DNA Repair Enzymes, Part A, Volume 591 is the latest volume in the Methods in Enzymology series and the first part of a thematic that focuses on DNA repair enzymes. Topics in this new release include chapters on the Optimization of Native and Formaldehyde iPOND Techniques for Use in Suspension Cells, the Proteomic Analyses of the Eukaryotic Replication Machinery, DNA Fiber Analysis: Mind the Gap!, Comet-FISH for Ultrasensitive Strand-Specific Detection of DNA Damage in Single Cells, Examining DNA Double-Strand Break Repair in a Cell Cycle-Dependent Manner, Base Excision Repair Variants in Cancer, and Fluorescence-Based Reporters for Detection of Mutagenesis in E. coli. Includes contributions from leading authorities working in enzymology Focuses on DNA repair enzymes Informs and updates on all the latest developments in the field of enzymology

In recent years, the role of cilia in the study of health, development and disease has been increasingly clear, and

new discoveries have made this an exciting and important field of research. This comprehensive volume, a complement to the new three-volume treatment of cilia and flagella by King and Pazour, presents easy-to-follow protocols and detailed background information for researchers working with cilia and flagella. *Covers protocols for primary cilia across several systems and species * Both classic and state-of-the-art methods readily adaptable across model systems, and designed to last the test of time * Relevant to clinicians and scientists working in a wide range of fields

This book represents an essential reference manual for all of the well-characterized leukemia-lymphoma cell lines currently available. It provides the most important facts, using the succinct and user-friendly format that has made the FactsBooks so popular with scientists and clinical researchers. Introductory chapters provide background and perspective for culturing malignant hematopoietic (blood forming) cell lines. These chapters are followed by over 400 comprehensive individual entries. Each cell line entry highlights essential clinical, immunological, genetic, and functional features and includes a comprehensive listing of references. Key Features * the full spectrum of malignant cell lines from all hematopoietic cell lineages * sister cell lines and relevant subclones * clinical data: patient, diagnosis, treatment status, and specimen source * authentication of derivation and availability * immunophenotype * cytogenetic karyotype * translocations and fusion genes * receptor gene rearrangements and genetic alterations * cell cultures aspects: establishment, medium, doubling time, growth * cytochemical profile * cytokine production and response to cytokines * proto-oncogene and transcription factor expression/alteration * functional features: differentiation induction, heterotransplantability * special unique features * key references