

Statistical Methods In Cancer Research Volume 1 The Analysis Of Case Control Studies

Recent Advances in Cancer Research and Therapy Advances in Cancer Research Tumor Models in Cancer Research Autophagy and Senescence in Cancer Therapy Computational Systems Biology Approaches in Cancer Research Advances in Cancer Research Treatment of Cancer NMR Metabolomics in Cancer Research Spheroids in Cancer Research High-Dimensional Data Analysis in Cancer Research An Introduction to Physical Oncology Novel Approaches to Colorectal Cancer Principles of Clinical Cancer Research Cancer Biology and Advances in Treatment Translational Research in Breast Cancer Frontiers in Clinical Drug Research - Anti-Cancer Agents: Volume 6 Small Molecules in Oncology Oxford Textbook of Cancer Biology Debating Cancer The Biology and Treatment of Cancer Next Generation Sequencing in Cancer Research NCI Fact Book Biomedical Informatics for Cancer Research Animal Models in Cancer Drug Discovery Common Minimum Technical Standards and Protocols for Biobanks Dedicated to Cancer Research Handbook of Cancer Treatment-Related Symptoms and Toxicities E-Book Drug Repurposing in Cancer Therapy Principles of Cancer Treatment and Anticancer Drug Development Molecular Biology of the Cell A Contagious Cause Breast Cancer RAS: Past, Present, and Future Drug Delivery in Oncology Tumor Organoids The Molecular Basis of Cancer Current Topics in Clinical Radiobiology of Tumors Ovarian Cancer: Molecular & Diagnostic Imaging and Treatment Strategies Statistical Methods in Cancer Research Ovarian Cancers Quality of Life and Side Effects Management in Lung Cancer Treatment

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Biomedical Informatics for Cancer Research Dec 04 2020 view, showing that multiple molecular pathways must be affected for cancer to develop, but with different specific proteins in each pathway mutated or differentially expressed in a given tumor (The Cancer Genome Atlas Research Network 2008; Parsons et al. 2008). Different studies demonstrated that while widespread mutations exist in cancer, not all mutations drive cancer development (Lin et al. 2007). This suggests a need to target only a deleterious subset of aberrant proteins, since any treatment must aim to improve health to justify its potential side effects. Treatment for cancer must become highly individualized, focusing on the specific aberrant driver proteins in an individual. This drives a need for informatics in cancer far beyond the need in other diseases. For instance, routine treatment with statins has become widespread for minimizing heart disease, with most patients responding to standard doses (Wilt et al. 2004). In contrast, standard treatment for cancer must become tailored to the molecular phenotype of an individual tumor, with each patient receiving a different combination of therapeutics aimed at the specific aberrant proteins driving the cancer. Tracking the aberrations that drive cancers, identifying biomarkers unique to each individual for molecular-level diagnosis and treatment response, monitoring adverse events and complex dosing schedules, and providing annotated molecular data for ongoing research to improve treatments comprise a major biomedical informatics need.

High-Dimensional Data Analysis in Cancer Research Jan 17 2022 Multivariate analysis is a mainstay of statistical tools in the analysis of biomedical data. It concerns with associating data matrices of n rows by p columns, with rows representing samples (or patients) and columns attributes of samples, to some response variables, e.g., patients outcome. Classically, the sample size n is much larger than p , the number of variables. The properties of statistical models have been mostly discussed under the assumption of fixed p and infinite n . The advance of biological sciences and technologies has revolutionized the process of investigations of cancer. The biomedical data collection has become more automatic and more extensive. We are in the era of p as a large fraction of n , and even much larger than n . Take proteomics as an example. Although proteomic techniques have been researched and developed for many decades to identify proteins or peptides uniquely associated with a given disease state, until recently this has been mostly a laborious process, carried out one protein at a time. The advent of high throughput proteome-wide technologies such as liquid chromatography-tandem mass spectroscopy make it possible to generate proteomic signatures that facilitate rapid development of new strategies for proteomics-based detection of disease. This poses new challenges and calls for scalable solutions to the analysis of such high dimensional data. In this volume, we will present the systematic and analytical approaches and strategies from both biostatistics and bioinformatics to the analysis of correlated and high-dimensional data.

Principles of Clinical Cancer Research Oct 14 2021 Principles of Clinical Cancer Research provides comprehensive coverage of the fundamentals of clinical cancer research, including the full spectrum of methodologies used in the field. For those involved in research or considering research careers, this book offers a mix of practical advice and analytical tools for effective training in theoretical principles as well as specific, usable teaching examples. The clinical oncologist or trainee will find a high-yield, practical guide to the interpretation of the oncology literature and the application of data to real-world settings. Valuable for both researchers and clinicians who wish to sharpen their skills, this book contains all of the cornerstones and explanations needed to produce and recognize quality clinical science in oncology. Written from the physician-scientist's perspective, the book lays a strong foundation in preclinical sciences that is highly relevant to careers in translational oncology research along with coverage of population and outcomes research and clinical trials. It brings together fundamental principles in oncology with the statistical concepts one needs to know to design and interpret studies successfully. With each chapter including perspectives of both clinicians and scientists or biostatisticians, Principles of Clinical Cancer Research provides balanced, instructive, and high-quality topic overviews and applications that are accessible and thorough for anyone in the field. KEY FEATURES: Gives real-world examples and rationales behind which research methods to use when and why Includes numerous tables featuring key statistical methods and programming commands used in everyday clinical research Contains illustrative practical examples and figures in each chapter to help the reader master concepts Provides tips and pointers for structuring a career, avoiding pitfalls, and achieving success in the field of clinical cancer research Access to fully downloadable eBook

NCI Fact Book Jan 05 2021

Treatment of Cancer Apr 20 2022 Treatment of Cancer is a multi-author work and comprehensive guide on modern cancer treatment that aims to give clinician and student alike the framework for an integrated approach to patient care, including radiotherapy, chemotherapy, and surgery. Much information is presented in tables and charts for easy assimilation, and clear algorithms for patient pathways are included to make decisions straightforward while allowing for sound clinical judgement.

The Biology and Treatment of Cancer Mar 07 2021 Offers a broad audience a concise presentation of the most up-to-date knowledge about the biology and treatment of cancer Full coverage of cancer prevention and control Clear, thorough discussion of current and possible future therapies Edited by two of the most eminent and widely recognized scholars of cancer research and therapeutics in the world, with contributions from top researchers and clinicians from across North America

Molecular Biology of the Cell May 29 2020

Small Molecules in Oncology Jun 10 2021 Extensive research into the molecular mechanisms of cancer disease has heralded a new age of targeted therapy. In malignant cells, key proteins that are crucial to tumor growth and survival are now being targeted directly with rationally designed inhibitors. Apart from monoclonal antibodies, small molecule therapeutics such as oncogenic protein kinase inhibitors are attracting a vast amount of investigational attention. This textbook, written by acknowledged experts, provides a broad overview of the small molecules currently used for the treatment of malignant diseases and discusses interesting novel compounds that are in the process of clinical development to combat cancer.

Recent Advances in Cancer Research and Therapy Oct 26 2022 Cancer continues to be one of the major causes of death throughout the developed world, which has led to increased research on effective treatments. Because of this, in the past decade, rapid progress in the field of cancer treatment has been seen. Recent Advances in Cancer Research and Therapy reviews in specific details some of the most effective and promising treatments developed in research centers worldwide. While referencing advances in traditional therapies and treatments such as chemotherapy, this book also highlights advances in biotherapy including research using Interferon and Super Interferon, HecI based and liposome based therapy, gene therapy, and p53 based cancer therapy. There is also a discussion of current cancer research in China including traditional Chinese medicine. Written by leading scientists in the field, this book provides an essential insight into the current state of cancer therapy and treatment. Includes a wide range of research areas including a focus on biotherapy and the development of novel cancer therapeutic strategies. Formatted for a broad audience including all working in researching cancer treatments and therapies. Discusses special traits and results of Chinese cancer research.

Statistical Methods in Cancer Research Aug 20 2019

Oxford Textbook of Cancer Biology May 09 2021 The study of the biology of tumours has grown to become markedly interdisciplinary, involving chemists, statisticians, epidemiologists, mathematicians, bioinformaticians, and computer scientists alongside biologists, geneticists, and clinicians. The Oxford Textbook of Cancer Biology brings together the most up-to-date developments from different branches of research into one coherent volume, providing a comprehensive and current account of this rapidly evolving field. Structured in eight sections, the book starts with a review of the development and biology of multi-cellular organisms, how they maintain a healthy homeostasis in an individual, and a description of the molecular basis of cancer development. The book then illustrates, as once cells become neoplastic, their signalling network is altered and pathological behaviour follows. It explores the changes that cancer cells can induce in nearby normal tissue, the new relationship established between them and the stroma, and the interaction between the immune system and tumour growth. The authors illustrate the contribution provided by high throughput techniques to map cancer at different levels, from genomic sequencing to cellular metabolic functions, and how information technology, with its vast amounts of data, is integrated with traditional cell biology to provide a global view of the disease. The effect of the different types of treatments on the biology of the neoplastic cells are explored to understand on the one side, why some treatments succeed, and on the other, how they can affect the biology of resistant and recurrent disease. The book concludes by summarizing what we know to date about cancer, and in what direction our understanding of cancer is moving. Edited by leading authorities in the field with an international team of contributors, this book is an essential resource for scholars and professionals working in the wide variety of sub-disciplines that make up today's cancer research and treatment community. It is written not only for consultation, but also for easy cover-to-cover reading.

Spheroids in Cancer Research Feb 18 2022 Malignant growth of cells is often characterized by disorganization of tissue structure, abnormal blood vessel development, and insufficient vascular supply. As a consequence, the cancer cells grow in a three-dimensional pattern in atypical microenvironments which include physical, chemical, and nutritional stresses. Necrosis often develops some distance away from the blood vessels. In association with an inherent instability in malignant cell populations, and also because of the changing microenvironment, significant cellular heterogeneity emerges with regard to various phenotypic characteristics. Both biological behavior and responses to therapeutic agents can be affected. A variety of in vitro and in vivo experimental models exist for research on properties of cancer cells during growth. The multicell spheroid model was developed as a system of intermediate complexity in which three dimensional growth of cells enhances cell-cell interactions and creates micro environments that simulate the conditions in intravascular microregions of tumors or micrometastatic foci. Spheroids may change their cellular characteristics with changing environments during growth. These can be studied under controlled conditions in vitro. Interest in details of experimental methods for this model system stimulated the organization of the First International Conference in Rochester, NY in 1980, the Proceedings of which were summarized in Cancer Research in 1981. Since then there has been a rapid increase in the use of this model system, and increased research on the significance of cell-cell and cell-microenvironment interactions in biology in general.

Novel Approaches to Colorectal Cancer Nov 15 2021 Novel Approaches to Colorectal Cancer, Volume 151 in the Advances in Cancer Research series, is composed of 11 reviews covering state-of-the-art research relating to the etiology, diagnosis, prevention and treatment of colorectal cancer. The book's chapters were written by recognized experts in the field, and include sections on molecular biomarkers in diagnosis and therapy, the interplay of diet, lifestyle, and the microbiome, early-age onset disease, mutational signature analysis, challenges in early detection, immunotherapy, organoid technology, the role of epigenetic alterations, disparities in minority populations, field carcinogenesis, and cancer as an evolutionary process. Each of these topics provides novel insights and concepts on various aspects of the nature of colorectal cancer, offering new opportunities for the management of a major source of cancer incidence and mortality. Provides information on the timely nature of the included topics, which represent the most current concepts and approaches in cancer research Offers outstanding and original reviews on colorectal cancer research Provides the authority and expertise of the authors, all of whom are highly recognized and conducting state-of-the-art investigations in cancer, with this release focusing on colorectal cancer

Tumor Models in Cancer Research Aug 24 2022 The past 6 years since the first edition of this book have seen great progress in the development of genetically engineered mouse (GEM) models of cancer. These models are finding an important role in furthering our understanding of the biology of malignant disease. A comfortable position for GEM models in the routine conduct of screening for potential new therapeutics is coming more slowly but is coming. Increasing numbers of genetically engineered mice are available, some with conditional activation of oncogenes, some with multiple genetic changes providing mouse models that are moving closer to the human disease.

Ovarian Cancers Jul 19 2019 In an era of promising advances in cancer research, there are considerable and even alarming gaps in the fundamental knowledge and understanding of ovarian cancer. Researchers now know that ovarian cancer is not a single disease-several distinct subtypes exist with different origins, risk factors, genetic mutations, biological behaviors, and prognoses. However, persistent questions have impeded progress toward improving the prevention, early detection, treatment, and management of ovarian cancers. Failure to significantly improve morbidity and mortality during the past several decades is likely due to several factors, including the lack of research being performed by specific disease subtype, lack of definitive knowledge of the cell of origin and disease progression, and incomplete understanding of genetic and non-genetic risk factors. Ovarian Cancers examines the state of the science in ovarian cancer research, identifies key gaps in the evidence base and the challenges to addressing those gaps, considers opportunities for advancing ovarian cancer research, and examines avenues for translation and dissemination of new findings and communication of new information to patients and others. This study makes recommendations for public- and private-sector efforts that could facilitate progress in reducing the incidence of morbidity and mortality from ovarian cancers.

Animal Models in Cancer Drug Discovery Nov 03 2020 Animal Models in Cancer Drug Discovery brings forward the most cutting-edge developments in tumor model systems for translational cancer research. The reader can find under this one volume virtually all types of existing and emerging tumor models in use by the research community. This book provides a deeper insight on how these newer models could de-risk modern drug discovery. Areas covered include up to date information on latest organoid derived models and newer genetic models. Additionally, the book discusses humanized animal tumor models for cancer immunotherapy and how they leverage personalized therapies. The chapter on larger animal, canine models and their use in and their use in pre-investigational new drug (pre-IND) development makes the volume unique. Unlike before, the incorporation of several simplified protocols, breeding methodologies, handling and assessment procedures to study drug intervention makes this book a must read. Animal Models in Cancer Drug Discovery is a valuable resource for basic and translational cancer researchers, drug discovery researchers, contract research organizations, and knowledge seekers at all levels in the biomedical field. Encompasses discussions on innovative animal models, xenograft, genetic models, primary models, organoid systems, humanized and other models in modern biology paradigms that are enhancing research in the field of drug discover Covers the use of these models in personalized medicine, immunotherapy, toxicology, pre-IND assessments and related drug development arenas Presents protocols, procedures, and a comprehensive glossary to help new readers understand technical terms and specialized nomenclature

Computational Systems Biology Approaches in Cancer Research Jun 22 2022 Praise for Computational Systems Biology Approaches in Cancer Research: "Complex concepts are written clearly and with informative illustrations and useful links. The book is enjoyable to read yet provides sufficient depth to serve as a valuable resource for both students and faculty." — Trey Ideker, Professor of Medicine, UC San Diego, School of Medicine "This volume is attractive because it addresses important and timely topics for research and teaching on computational methods in cancer research. It covers a broad variety of approaches, exposes recent innovations in computational methods, and provides access to source code and to dedicated interactive web sites." — Yves Moreau, Department of Electrical Engineering, SysBioSys Centre for Computational Systems Biology, University of Leuven With the availability of massive amounts of data in biology, the need for advanced computational tools and techniques is becoming increasingly important and key in understanding biology in disease and healthy states. This book focuses on computational systems biology approaches, with a particular lens on tackling one of the most challenging diseases - cancer. The book provides an important reference and teaching material in the field of computational biology in general and cancer systems biology in particular. The book presents a list of modern approaches in systems biology with application to cancer research and beyond. It is structured in a didactic form such that the idea of each approach can easily be grasped from the short text and self-explanatory figures. The coverage of topics is diverse: from pathway resources, through methods for data analysis and single data analysis to drug response predictors, classifiers and image analysis using machine learning and artificial intelligence approaches. Features Up to date using a wide range of approaches Application example in each chapter Online resources with useful applications'

Ovarian Cancer: Molecular & Diagnostic Imaging and Treatment Strategies Sep 20 2019 The present book on Molecular & Diagnostic Imaging and Treatment Strategies of ovarian cancer is one of two companion books with the second one being focused on Cell and Molecular Biology of Ovarian Cancer. Both books include new exciting aspects of ovarian cancer research with chapters written by experts in their respective fields who contributed their unique expertise in specific ovarian cancer research areas and include cell and molecular details that are important for the specific subtopics. Comprehensive and concise reviews are included of key topics in the field.

Advances in Cancer Research Sep 25 2022 Advances in Cancer Research, Volume 137, the latest release in this ongoing, well-regarded serial provides invaluable information on the exciting and fast-moving field of cancer research. This volume presents original reviews on research bridging oncology and gene expression, with this volume covering unconventional approaches to modulating the immunogenicity of tumor cells, tumor dormancy and immunoediting, the emerging role of anti-apoptotic Bcl-2 family proteins in chemoresistance, Beclin-1 and autophagy, MDA-7/IL-24, and nanotechnology and medicine. Provides information on cancer research Offers outstanding and original reviews on a range of cancer research topics Serves as an indispensable reference for researchers and students alike

Tumor Organoids Dec 24 2019 Cancer cell biology research in general, and anti-cancer drug development specifically, still relies on standard cell culture techniques that place the cells in an unnatural environment. As a consequence, growing tumor cells in plastic dishes places a selective pressure that substantially alters their original molecular and phenotypic properties. The emerging field of regenerative medicine has developed bioengineered tissue platforms that can better mimic the structure and cellular heterogeneity of in vivo tissue, and are suitable for tumor bioengineering research. Microengineering technologies have resulted in advanced methods for creating and culturing 3-D human tissue. By encapsulating the respective cell type or combining several cell types to form tissues, these model organs can be viable for longer periods of time and are cultured to develop functional properties similar to native tissues. This approach recapitulates the dynamic role of cell-cell, cell-ECM, and mechanical interactions inside the tumor. Further incorporation of cells representative of the tumor stroma, such as endothelial cells (EC) and tumor fibroblasts, can mimic the in vivo tumor microenvironment. Collectively, bioengineered tumors create an important resource for the in vitro study of tumor growth in 3D including tumor biomechanics and the effects of anti-cancer drugs on 3D tumor tissue. These technologies have the potential to overcome current limitations to genetic and histological tumor classification and development of personalized therapies.

Debating Cancer Apr 08 2021 "Cancer research is at a crossroads. Traditionally, cancer has been thought of as a disease of gene mutation, where the stepwise accumulation of cancer gene mutations is the key, and the identification of common gene mutations has been considered to be essential for diagnosis and treatment. Despite extensive research efforts and accumulated knowledge on cancer genes and pathways, the clinical benefits of this traditional approach have been limited. Recently, cancer genome sequencing has revealed an extensive amount of genetic heterogeneity where the long-expected common mutation drivers have been difficult, if not impossible, to identify. These realities ultimately challenge the conceptual framework of current cancer biology. This book introduces a new concept of genome theory of cancer evolution, in an attempt to unify the field. Many important and representative, but often confusing, questions and paradoxes are critically analyzed. By comparing gene- and genome-based theories, the hidden flaws of many popular viewpoints are addressed. This discussion is intended to initiate a much-needed critical re-evaluation of current cancer research."--

The Molecular Basis of Cancer Nov 22 2019 Successfully fighting cancer starts with understanding how it begins. This thoroughly revised 3rd Edition explores the scientific basis for our current understanding of malignant transformation and the pathogenesis and treatment of cancer. A team of leading experts thoroughly explain the molecular biologic principles that underlie the diagnostic tests and therapeutic interventions now being used in clinical trials and practice. Incorporating cutting-edge advances and the newest research, the book provides thorough descriptions of everything from molecular abnormalities in common cancers to new approaches for cancer therapy. Features sweeping updates throughout, including molecular targets for the development of anti-cancer drugs, gene therapy, and vaccines...keeping you on the cutting edge of your specialty. Offers a new, more user-friendly full-color format so the information that you need is easier to find. Presents abundant figures-all redrawn in full color-illustrating major concepts for easier comprehension. Features numerous descriptions of the latest clinical strategies-helping you to understand and take advantage of today's state-of-the-art biotechnology advances.

Advances in Cancer Research May 21 2022 Advances in Cancer Research

RAS: Past, Present, and Future Feb 24 2020 Advances in Cancer Research, volume 153 provides a timely review of the biology, biochemistry, and current approaches to therapeutically target the RAS oncoprotein, the most frequently mutated oncogene family in human cancers. 2021 saw the approval of the first direct RAS inhibitor (sotorasib) for use in treating non-small cell lung cancers harboring KRAS(G12C) mutations. The successful approval and use of this drug highlights that the once "undruggable RAS is indeed pharmacologically tractable. This volume provides an overview of efforts to develop additional approaches to therapeutically target oncogenic RAS. In addition, the reader will find excellent reviews on the history and research efforts to understand the biochemistry and oncogenic activity of RAS in human cancers. Overview of the history and development of efforts to pharmacologically inhibit RAS. Discussion of the biochemistry and biology of different RAS mutant proteins and how this might be effectively leveraged in the development of anti-RAS therapies. Up-to-date reviews of the cutting-edge approaches to develop new anti-RAS pharmacologies.

A Contagious Cause Apr 27 2020 Is cancer a contagious disease? In the late nineteenth century this idea, and attending efforts to identify a cancer "germ," inspired fear and ignited controversy. Yet speculation that cancer might be contagious also contained a kernel of hope that the strategies used against infectious diseases, especially vaccination, might be able to subdue this dread disease. Today, nearly one in six cancers are thought to have an infectious cause, but the path to that understanding was twisting and turbulent. ? A Contagious Cause is the first book to trace the century-long hunt for a human cancer virus in America, an effort whose scale exceeded that of the Human Genome Project. The government's campaign merged the worlds of molecular biology, public health, and military planning in the name of translating laboratory discoveries into useful medical therapies. However, its expansion into biomedical research sparked fierce conflict. Many biologists dismissed the suggestion that research should be planned and the idea of curing cancer by a vaccine or any other means as unrealistic, if not dangerous. Although the American hunt was ultimately fruitless, this effort nonetheless profoundly shaped our understanding of life at its most fundamental levels. A Contagious Cause links laboratory and legislature as has rarely been done before, creating a new chapter in the histories of science and American politics.

NMR Metabolomics in Cancer Research Mar 19 2022 The application of nuclear magnetic resonance (NMR) metabolomics in cancer research requires an understanding of the many possibilities that NMR metabolomics can offer, as well as of the specific characteristics of the cancer metabolic phenotype and the open questions in cancer research. NMR metabolomics in cancer research presents a detailed account of the NMR spectroscopy methods applied to metabolomics mixture analysis along with a discussion of their advantages and disadvantages. Following an overview of the potential use of NMR metabolomics in cancer research, the book begins with an examination of the cancer metabolic phenotype and experimental methodology, before moving on to cover data pre-processing and data analysis. Chapters in the latter part of the book look at dynamic metabolic profiling, biomarker discovery, and the application of NMR metabolomics for different types of cancer, before a concluding chapter discusses future perspectives in the field. Focused description of NMR spectroscopy needed by cancer biologists who are starting to use metabolomics Current overview of knowledge related to the cancer metabolic phenotype from the perspective of metabolomics applications Information about the best practices in NMR metabolomics experimentation and data preprocessing as applied to different sample types

Breast Cancer Mar 27 2020 This book provides the reader with up-to-date information on important advances in the understanding of breast cancer and innovative approaches to its management. Current and emerging perspectives on genetics, biology, and prevention are first discussed in depth, and individual sections are then devoted to pathology, imaging, oncological surgery, plastic and reconstructive surgery, medical oncology, and radiotherapy. In each case the focus is on the most recent progress and/or state of the art therapies and techniques. Further topics to receive detailed consideration include particular conditions requiring multidisciplinary approaches, the investigation of new drugs and immunological agents, lifestyle and psychological aspects, and biostatistics and informatics. The book will be an excellent reference for practitioners, interns and residents in medical oncology, oncologic surgery, radiotherapy, pathology, and human genetics, researchers, and advanced medical students.

Cancer Biology and Advances in Treatment Sep 13 2021 This new series, based on a bi-annual conference and its topics, represents a major contribution to the emerging science of cancer research and regenerative medicine. Each volume brings together some of the most pre-eminent scientists working on cancer biology, cancer treatment, cancer diagnosis, cancer prevention and regenerative medicine to share information on currently ongoing work which will help shape future therapies. These volumes are invaluable resources not only for already active researchers or clinicians but also for those entering these fields, plus those in industry. Cancer Biology and Advances in Treatment is a proceedings volume which reflects papers presented at the 3rd bi-annual Innovations in Regenerative Medicine and Cancer Research conference; taken with its companion volume Tissue Engineering and Regenerative Medicine and Stem Cells: Biology and Engineering it provides a complete overview of the papers from that meeting of international experts.

Autophagy and Senescence in Cancer Therapy Jul 23 2022 Advances in Cancer Research, Volume 150, the latest release in this ongoing series, covers the relationship(s) between autophagy and senescence, how they are defined, and the influence of these cellular responses on tumor dormancy and disease recurrence. Specific sections in this new release include Autophagy and senescence, converging roles in pathophysiology, Cellular senescence and tumor promotion: role of the unfolded protein response, autophagy and senescence in cancer stem cells, Targeting the stress support network regulated by autophagy and senescence for cancer treatment, Autophagy and PTEN in DNA damage-induced senescence, mTOR as a senescence manipulation target: A forked road, and more. Addresses the relationship between autophagy and senescence in cancer therapy Covers autophagy and senescence in tumor dormancy Explores autophagy and senescence in disease recurrence

Current Topics in Clinical Radiobiology of Tumors Oct 22 2019

Handbook of Cancer Treatment-Related Symptoms and Toxicities E-Book Sep 01 2020 Early recognition and management of adverse effects of cancer treatments are essential for optimal care of patients with cancer, and drastically different approaches are required for different physiologic reactions. Handbook of Cancer Treatment-Related Symptoms and Toxicities is a focused, one-stop resource that enables clinicians to quickly find up-to-date, reliable information needed at the point of care. The high-yield approach prioritizes the most common toxicities associated with cancer treatment, and concise, templated chapters offer fast access to information needed in day-to-day practice. Presents a user-friendly overview of cancer treatment-related symptoms and toxicities management in a practical, easy-to-use format, allowing you to quickly find information in one convenient, concise resource. Covers systemic and radiation therapies, including chemotherapy, immunotherapy, targeted therapies, and radiation therapy, detailing symptoms of each toxicity to confirm your diagnosis. Overviews pharmacologic and non-pharmacologic approaches to symptom management. Offers recommendations for mitigating toxicities in high-risk patients. Discusses key topics such as management of infusion reactions, when the need for biopsy is warranted, and the unique challenges posed by novel immunotherapies.

Drug Delivery in Oncology Jan 25 2020 In this first authoritative overview on modern cancer chemotherapy 121 international specialists have contributed their experience and recent data for what is likely to become the gold standard in the field. The authors summarize knowledge gained over the past decade, from basic concepts to successful applications in the clinic, covering active and passive targeting strategies as well as tissue-specific approaches. All current and future targeted delivery systems are discussed, from ligand-based to antibody-based polymer-based systems, right up to micro- and nanoparticulate systems. A special section covers the delivery of nucleic acid therapeutics, such as siRNA, miRNA and antisense nucleotides. In each case, a description of the basic technique is followed by a discussion of the latest preclinical and clinical developments in the field. By virtue of its clear and didactic structure, rich illustrative material and summary chapters, this handbook and ready reference enables the efficient transfer of knowledge between different disciplines, from basic research to the clinician and vice versa. It is equally well suited for professionals, researchers and students in medical oncology and cancer biology, and is also excellent for teaching medical students the foundations of 21st century cancer chemotherapy.

Principles of Cancer Treatment and Anticancer Drug Development Jun 29 2020 This book explains how current medicines against cancer work and how we find new ones. It provides an easy-to-understand overview of current options to treat patients with cancer, which includes Surgery, Radiation therapy, Chemotherapy, Targeted therapy and Immunotherapy. The efficiency of all these treatments is limited by the capacity of cancer cells to escape therapy. This book explains the mechanisms of anti-cancer drug resistance and strategies to overcome it. The discovery and development process of a new drug is detailed beginning with the identification and validation of a therapeutic target, the identification of an inhibitor of the target and its subsequent preclinical and clinical development until its approval by regulatory authorities. Particular emphasis has been given to specific aspects of the development process including lead generation and optimization, pharmacokinetics, ADME analysis, pharmacodynamics, toxicity and efficacy assessment, investigational new drug (IND) and new drug application (NDA) and the design of clinical trial and their phases. The book covers many aspects of modern personalized oncology and discusses economic aspects of our current system of developing new medicines and its impact on our societies and on future drug research. The author of this book, Dr. Link counts with more than 20 years of experience in biomedical research reflected in numerous publications, patents and key note and plenary presentations at international conferences. Interested readers, students and teachers should read this book as it provides a unique way to learn/teach about basic concepts in oncology and anti-cancer drug research.

Common Minimum Technical Standards and Protocols for Biobanks Dedicated to Cancer Research Oct 02 2020 Biobanking has developed at a rapid pace in recent years, initiated by the drive for personalized medicine and the need for high-quality biological resources, associated data for scientific research, and technological advancement of analytical platforms for molecular and genetic research. This book includes guidelines and recommendations for biobanks not only in high-income countries but also in low- and middle-income countries (LMICs). The recommendations are based on validated and/or evidence-based guidelines. The book also includes sections on sample sharing, ethical, legal, and social issues (ELSI) and harmonization guidelines that are important in supporting the collaborative research efforts that make use of biological materials. In particular, the section on open access deals with the principles of sharing and provides recommendations for biobanks in relation to sample and data sharing, which is key to establishing research collaboration. The section on governance provides guidelines on governance structures and standard templates for biobanks for transparent and effective running of the facilities. This book also benefits from the experience and knowledge gained by IARC from coordinating the LMICs Biobank and Cohort Building Network (BCNet) and managing an international biobank, which contains diverse collections of specimens and data drawn from studies across the world, including the EPIC (European Prospective Investigation into Cancer and Nutrition) collection.

Translational Research in Breast Cancer Aug 12 2021 This book describes recent advances in translational research in breast cancer and presents emerging applications of this research that promise to have meaningful impacts on diagnosis and treatment. It introduces ideas and materials derived from the clinic that have been brought to "the bench" for basic research, as well as findings that have been applied back to "the bedside". Detailed attention is devoted to breast cancer biology and cell signaling pathways and to cancer stem cell and tumor heterogeneity in breast cancer. Various patient-derived research models are discussed, and a further focus is the role of biomarkers in precision medicine for breast cancer patients. Next-generation clinical research receives detailed attention, addressing the increasingly important role of big data in breast cancer research and a wide range of other emerging developments. An entire section is also devoted to the management of women with high-risk breast cancer. Translational Research in Breast Cancer will help clinicians and scientists to optimize their collaboration in order to achieve the common goal of conquering breast cancer.

Frontiers in Clinical Drug Research - Anti-Cancer Agents: Volume 6 Jul 11 2021 Frontiers in Clinical Drug Research - Anti-Cancer Agents is a book series intended for pharmaceutical scientists, postgraduate students and researchers seeking updated and critical information for developing clinical trials and devising research plans in anti-cancer research. Reviews in each volume are written by experts in medical oncology and clinical trials research and compile the latest information available on special topics of interest to oncology and pharmaceutical chemistry researchers. The sixth volume of the book features reviews on these topics: · Immunomodulating Agents in The Treatment of Acute Myeloid Leukemia · Potential Natural Products for Prostate Cancer Management · Inhibition of Key Protein-Protein Interactions by Small Molecules for Cancer Drug Design · Efficacy of Hepatic Arterial Infusion Chemotherapy (HAIC) For Advanced Hepatocellular Carcinoma · Targeting Cancer Stem Cells: Implications in Health and Disease

Next Generation Sequencing in Cancer Research Feb 06 2021 This volume provides an interdisciplinary perspective of applying Next Generation Sequencing (NGS) technology to cancer research. It aims to systematically introduce the concept of NGS, a variety of NGS platforms and their practical implications in cancer biology. This unique and comprehensive text will integrate the unprecedented NGS technology into various cancer research projects as opposed to most books which offer a detailed description of the technology. This volume will present true experimental results with concrete data processing pipelines, discuss the bottleneck of each platform for real project in cancer research. In addition, single cancer cell sequencing as the proof of concept will be introduced in this book, along with cutting-edge information provided will help the intended audience to develop a comprehensive understanding of the NGS technology and practical whole genome sequencing data analysis and rapidly translate into their own research, specifically in the field of cancer biology.

Drug Repurposing in Cancer Therapy Jul 31 2020 Drug Repurposing in Cancer Therapy: Approaches and Applications provides comprehensive and updated information from experts in basic science research and clinical practice on how existing drugs can be repurposed for cancer treatment. The book summarizes successful stories that may assist researchers in the field to better design their studies for new repurposing projects. Sections discuss specific topics such as in silico prediction and high throughput screening of repurposed drugs, drug repurposing for overcoming chemoresistance and eradicating cancer stem cells, and clinical investigation on combination of repurposed drug and anticancer therapy. Cancer researchers, oncologists, pharmacologists and several members of biomedical field who are interested in learning more about the use of existing drugs for different purposes in cancer therapy will find this to be a valuable resource. Presents a systematic and up-to-date collection of the research underpinning the various drug repurposing approaches for a quick, but in-depth understanding on current trends in drug repurposing research Brings better understanding of the drug repurposing process in a holistic way, combining both basic and clinical sciences Encompasses a collection of successful stories of drug repurposing for cancer therapy in different cancer types

Quality of Life and Side Effects Management in Lung Cancer Treatment Jun 17 2019

An Introduction to Physical Oncology Dec 16 2021 Physical oncology has the potential to revolutionize cancer research and treatment. The fundamental rationale behind this approach is that physical processes, such as transport mechanisms for drug molecules within tissue and forces exchanged by cancer cells with tissue, may play an equally important role as biological processes in influencing progression and treatment outcome. This book introduces the emerging field of physical oncology to a general audience, with a focus on recent breakthroughs that help in the design and discovery of more effective cancer treatments. It describes how novel mathematical models of physical transport processes incorporate patient tissue and imaging data routinely produced in the clinic to predict the efficacy of many cancer treatment approaches, including chemotherapy and radiation therapy. By helping to identify which therapies would be most beneficial for an individual patient, and quantifying their effects prior to actual implementation in the clinic, physical oncology allows doctors to design treatment regimens customized to each patient's clinical needs, significantly altering the current clinical approach to cancer treatment and improving the outcomes for patients.