CAMPTOTHECINS IN CANCER THERAPY CANCER DRUG DISCOVERY AND DEVELOPMENT

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Camptothecins In Cancer Therapy Cancer Drug Discovery And Development Introduction

Camptothecins in Cancer Therapy

A critical review our current understanding of camptothecins, their shortcomings, and of the possibilities for improving their clinical performance. The authors discuss new camptothecin analog development, drug delivery issues for optimizing their anticancer activity, and their potential use in a variety of different cancers. Additional chapters describe what is known about the biochemistry, the pharmacology, and the chemistry of the camptothecins, including the mechanism of topoisomerase and how camptothecins poison this enzyme, the use of animal models in defining the anticancer potential of camptothecins, and the question of camptothecin resistance.

Anticancer Drug Development Guide

Experienced cancer researchers from pharmaceutical companies, government laboratories, and academia comprehensively review and describe the arduous process of cancer drug discovery and approval. They focus on using preclinical in vivo and in vitro methods to identify molecules of interest, detailing the targets and criteria for success in each type of testing and defining the value of the information obtained from the various tests. They also define each stage of clinical testing, explain the criteria for success, and outline the requirements for FDA approval. A companion volume by the same editor (Cancer Therapeutics: Experimental and Clinical Agents) reviews existing anticancer drugs and potential anticancer therapies. These two volumes in the Cancer Drug Discovery and Development series reveal how and why molecules become anticancer drugs and thus offer a blueprint for the present and the future of the field.

Combination Cancer Therapy

Expert physician-scientists and clinicians review those combinations of novel target agents classic chemotherapies that hold the most promise for the future of medical oncology, and detail their optimal sequence, pharmacokinetic interactions, and interaction with downstream cellular signals. The combinations run the gamut of targeted therapies against cell surface receptors (EGF-R and HER2), the cell cycle (the CDKs), signal transduction events (PKC and NF-kB), apoptosis (bcl-2), as well as focused therapies in ovarian cancer, hematologic diseases, and breast cancer. The authors emphasize novel translational approaches that are rapidly moving from the laboratory bench top to the patient's bedside for the future treatments in cancer therapy.

Deoxynucleoside Analogs in Cancer Therapy

Successful cancer chemotherapy relies heavily on the application of various deoxynucleoside analogs. Since

the very beginning of modern cancer chemotherapy, a number of antimetabolites have been introduced into the clinic and subsequently applied widely for the treatment of many malignancies, both solid tumors and hematological disorders. In the latter diseases, cytarabine has been the mainstay of treatment of acute myeloid leukemia. Although many novel compounds were synthesized in the 1980s and 1990s, no real improvement was made. However, novel technology is now capable of elucidating the molecular basis of several inborn errors as well as some specific malignancies. This has enabled the synthesis of several deoxynucleoside analogs that could be applied for specific malignancies, such as pentostatin and subsequently chlorodeoxyadenosine (cladribine) for the treatment of hairy cell leukemia. Already in the early stage of deoxynucleoside analog development, it was recognized that several of these compounds were very effective in the treatment of various viral infections, such as for the treatment of herpes infections. This formed the basis initially for the design of azidothymidine and subsequently many other analogs, which are currently successfully used for the treatment of HIV infections. As a spin-off of these research lines, some compounds not eligible for development as antiviral agents appeared to be very potent anticancer agents. The classical example is gemcitabine, now one of the most widely applied deoxynucleoside analogs, used for the (combination) treatment of non-small cell lung cancer, pancreatic cancer, bladder cancer, and ovarian cancer.

Principles of Cancer Treatment and Anticancer Drug Development

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.

Targeting the DNA Damage Response for Anti-Cancer Therapy

Over the past decade a complex role for DNA damage response (DDR) in tumorigenesis has emerged. A proficient DDR has been shown to be a primary cause for cellular resistance to the very many DNA damaging drugs, and IR, that are widely used as standard-of-care across multiple cancer types. It has also been shown that defects in this network, predominantly within the ATM mediated signaling pathway, are commonly observed in cancers and may be a primary event during tumorigenesis. Such defects may promote a genomically unstable environment, facilitating the persistence of mutations, any of which may provide a growth or survival advantage to the developing tumor. In addition, these somatic defects provide opportunities to exploit a reliance on remaining repair pathways for survival, a process which has been termed synthetic lethality. As a result of all these observations there has been a great interest in targeting the DDR to provide anti-cancer agents that may have benefit as monotherapy in cancers with high background DNA damage levels or as a means to increase the efficacy of DNA damaging drugs and IR. In this book we will review a series of important topics that are of great interest to a broad range of academic, industrial and clinical researchers, including the basic science of the DDR, its role in tumorigenesis and in dictating response to DNA damaging drugs and IR. Additionally, we will focus on the several proteins that have been targeted in attempts to provide drug candidates, each of which appear to have quite distinct profiles and could

represent very different opportunities to provide patient benefit.

Proteasome Inhibitors in Cancer Therapy

A panel of leading academic and pharmaceutical investigators takes stock of the remarkable work that has been accomplished to date with proteasome inhibitors in cancer, and examines emerging therapeutic possibilities. The topics range from a discussion of the chemistry and cell biology of the proteasome and the rationale for proteasome inhibitors in cancer to a review of current clinical trials underway. The discussion of rationales for testing proteasome inhibitors in cancer models covers the role of the proteasome in NF-kB activation, the combining of conventional chemotherapy and radiation with proteasome inhibition, notably PS-341, new proteasome methods of inhibiting viral maturation, and the role of protesome inhibition in the treatment of AIDS. The authors also document the development of bortezomib (VelcadeTM) in Phase I clinical trials and in a multicentered Phase II clinical trials in patients with relapsed and refractory myeloma.

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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.

Novel Anticancer Drug Protocols

We are in an exciting era in the war against cancer, with real prospects for novel anticancer drugs that are cancer cell-specific without the toxicities that have been the hallmark of conventional cytotoxic cancer chemotherapy. Advances in cancer cell biology fueled by the molecular biology revolution have resulted in the uncovering of many novel potential molecular targets for cancer therapy. New anticancer drug discovery and development is now largely focused on exploiting these new molecular targets, which encompass oncogenes, tumor s- pressor genes, and their gene products, as well as targets involved in tumor angiogenesis, metastasis, survival, and longevity mechanisms. Exploitation of some of these targets has already yielded fruits and introduced new paradigms of molecularly targeted cancer therapy into the clinic, namely, protein kinase in- bition by antibodies or small molecules, exemplified by Herceptin® (trastuzumab), a humanized antibody targeted against the HER-2 growth factor receptor tyrosine kinase for the treatment of metastatic breast cancer; and Gleevec, a small molecule bcr-abl kinase inhibitor for the treatment of chronic myel- enous leukemia.

Cell Cycle Inhibitors in Cancer Therapy

Leading clinicians and investigators review in a comprehensible and user-friendly style all the latest information about the molecular biology of cell cycle control and demonstrate its clinical relevance to

understanding neoplastic diseases. Topics range from Cdk inhibitors and cell cycle regulators to the prognostic value of p27 and tumor suppressor genes as diagnostic tools. Actual case studies show how the new molecular understanding has produced such drugs as Flavopiridol and Sulindac. The book brings all the recent critical research findings to bear on clinical practice, and clearly shows their powerful impact on the diagnostics, prognostics, and therapeutics of cancer, AIDS, and cardiovascular disease.

Tumor Targeting in Cancer Therapy

In Tumor Targeting in Cancer Therapy, Dr. Michel PagÃ© and a panel of authoritative experts from the drug industry, clinics, and academia introduce the principles and techniques of tumor targeting and critically survey their applications from laboratory to bedside. By concisely synthesizing the many technical details, the authors illuminate this innovative technique, ranging from the fundamentals of drug targeting and in vivo and in vitro experimentation, to such emerging therapeutic uses as radioimmunotherapy, radioimmunodetection, therapy with cytotoxic antibodies, immunotoxins, enzyme prodrug immunotherapy, and immunotherapeutics with fusion proteins. There are also reviews of targeting tumors with radioimmunoconjugates, photodynamic therapy, and magnetic drugs, as well as discussions of the internalization of antibodies, bioconjugation and biodistribution, the use of cytotoxic drugs, and the pros and cons of targeting by antibody or ligand.

Principles of Anticancer Drug Development

A practical guide to the design, conduction, analysis and reporting of clinical trials with anticancer drugs.

Transforming Growth Factor-Beta in Cancer Therapy, Volume II

Transforming Growth Factor- ß in Cancer Therapy, Vols. 1 and 2, provides a compendium of findings about the role of transforming growth factor- ß (TGF- ß) in cancer treatment and therapy. The second volume, Cancer Treatment in Therapy, is divided into three parts. The companion volume details the role of TGF- ß on basic and clinical biology.

Molecular Targeting in Oncology

This book presents an overview of the development of targeted therapies for the treatment of cancer with an emphasis on clinical application. The volume covers the complexity of the rapidly developing area of targeted therapies for the treatment of patients with cancer. It is structured in a way so readers may begin with chapters that most interest them and work through the rest of the chapters in the order of their choice.

Platinum-Based Drugs in Cancer Therapy

Leading international experts comprehensively review all aspects of platinum anticancer drugs and their current use in treatment, as well as examining their future therapeutic prospects. Writing from a variety of disciplines, these authorities discuss the chemistry of cisplatin in aqueous solution, the molecular interaction of platinum drugs with DNA, and such exciting new areas as DNA mismatch repair and replicative bypass, apoptosis, and the transport of platinum drugs into tumor cells. The emergent platinum drugs of the future-orally active agents, the sterically hindered ZD0473, and the polynuclear charged platinum BBR3464-are also fully considered. Timely and interdisciplinary, Platinum-Based Drugs in Cancer Therapy offers cancer therapeutics specialists an illuminating survey of every aspect of platinum drugs from mechanisms of action to toxicology, tumor resistance, and new analogs.

Fluoropyrimidines in Cancer Therapy

Leading cancer researchers update and review the mechanisms of action and the therapeutic selectivity and efficacy of 5-FU with and without leucovorin and its prodrugs in the treatment of colorectal cancer. Among the combination agents considered are UFT/LV, 5-FU/EU, capecitabine (Xeloda), S-1, and a variety of thymidylate synthase inhibitors. The authors discuss the potential advantages and disadvantages of these varied drugs and their mode of administration. Based on historical results with these agents when used alone, they also present a rationale for their results when used in combination with other agents.

Sensitization of Cancer Cells for Chemo/Immuno/Radio-therapy

This book reviews novel approaches developed to reverse tumor cell resistance to chemo/immuno/radio-therapy and the use of various sensitizing agents in combination with various cytotoxics. It also introduces several current approaches developed by established investigators that are aimed at overcoming resistance. This is the first volume to compile studies on tumor cell sensitization. It will prove useful for students, scientists, clinicians and pharmaceutical companies.

Gene Therapy for Cancer

The three sections of this volume present currently available cancer gene therapy techniques. Part I describes the various aspects of gene delivery. In Part II, the contributors discuss strategies and targets for the treatment of cancer. Finally, in Part III, experts discuss the difficulties inherent in bringing gene therapy treatment for cancer to the clinic. This book will prove valuable as the volume of preclinical and clinical data continues to increase.

Novel Designs of Early Phase Trials for Cancer Therapeutics

Novel Designs of Early Phase Trials for Cancer Therapeutics provides a comprehensive review by leaders in the field of the process of drug development, the integration of molecular profiling, the changes in early phase trial designs, and endpoints to optimally develop a new generation of cancer therapeutics. The book discusses topics such as statistical perspectives on cohort expansions, the role and application of molecular profiling and how to integrate biomarkers in early phase trials. Additionally, it discusses how to incorporate patient reported outcomes in phase one trials. This book is a valuable resource for medical oncologists, basic and translational biomedical scientists, and trainees in oncology and pharmacology who are interested in learning how to improve their research by using early phase trials. Brings a comprehensive review and recommendations for new clinical trial designs for modern cancer therapeutics Provides the reader with a better understanding on how to design and implement early phase oncology trials Presents a better and updated understanding of the process of developing new treatments for cancer, the exciting scientific advances and how they are informing drug development

Transforming Growth Factor-Beta in Cancer Therapy, Volume I

Transforming Growth Factor- ß in Cancer Therapy, Vols. 1 and 2, provides a compendium of findings about the role of transforming growth factor- ß (TGF- ß) in cancer treatment and therapy. The first volume, Basic and Clinical Biology, is divided into three parts. This volume’s companion, Cancer Treatment in Therapy, examines transforming growth factor- ß in other developing and advanced cancers and methods of treatment and therapy.

Targeted Therapies in Cancer:

Billions of dollars are spent every year on research into targeted therapies for cancer. That’s why it’s more than ever crucial for the thousands of scientists working in the field to keep right up to date with the cutting edge. This fascinating collection of material goes a long way to helping them do so, featuring as it does

contributions to a crucial international meeting in Italy. The meeting provided a forum for scientists and clinicians working in cancer drug discovery and therapy to share their opinions and experiences. The text here offers readers an overview of diverse approaches, ranging from drug discovery to cellular therapy. Overall, the book addresses the key question of whether ultimately targeted therapy in cancer will be a myth or a reality.

Checkpoint Responses in Cancer Therapy

Extensive research has uncovered a set of molecular surveillance mechanisms – commonly called "checkpoints" – which tightly monitor cell-cycle processes. Today's anticancer drug development has identified many of these cell-cycle checkpoint molecules as effective targets. Research now promises to uncover a new generation of anticancer drugs with improved therapeutic indices based on their ability to target emerging checkpoint components. Checkpoint Responses in Cancer Therapy summarizes the advances made over the past 20 years, identifying components of cell-cycle checkpoints and their molecular regulation during checkpoint activation and validating the use of checkpoint proteins as targets for the development of anticancer drugs. This book's distinguished panel of authors takes a close look at topics ranging from the major molecular players affecting DNA synthesis and the response to DNA damage to advances made in the identification of chemical compounds capable of inhibiting individual mitotic kinases. Illuminating and authoritative, Checkpoint Responses in Cancer Therapy offers a critical summary of findings for researchers in the pharmaceutical and biotechnology industries and a valuable resource for academic scientists in cancer research and the study of cell-cycle regulation, signal transduction and apoptosis.

Encyclopedia of Drug Discovery and Development: Volume III (Cancer Treatment and Anti-Infectives)

Significant information regarding cancer treatment has been provided in this insightful book. It describes a case study based analysis of several distinct aspects of drug development, ranging from target recognition and characterization to chemical enhancement for efficiency and security, as well as bioproduction of natural products. Special aspects of the formal drug development process are also described. Since drug development is an extremely complicated integrative process, case studies are a distinguished device to acquire insight in this field. The whole book represents an uncommon compilation of distinct facets providing insight in the complexity of drug development covering two sections: 'Novel Approaches to Cancer Treatment' and 'Anti-Infectives'.

Oncogene-Directed Therapies

Prominent investigators and clinicians summarize in a balanced blend of fundamental science, basic research, experimental therapeutics, and early clinical experiences, what is known about oncogenes and oncogenesis, and describe how that knowledge can be used to treat the cancer. The contributors explain how, why, and under what conditions certain proteins acquire the ability to transform eukaryotic cells, and detail the crucial biological consequences of this oncogenic transformation, particularly for cellular mitogenesis, survival, differentiation, migration, proteolysis, or angiogenic competence. Their articles thoroughly explicate the premises, principles, techniques, and approaches to oncogene targeting in various types of human cancer by using signal transduction inhibitors, immunological targeting methods, and antisense gene therapy.

Pediatric Cancer Therapeutics Development

This book provides a comprehensive overview of the scientific, medical, regulatory, and economic considerations associated with the discovery, development, and delivery of novel therapeutics for children with cancer. Co-authored by a diverse team from academic, government, and industry backgrounds, the book describes the steps in the process from the identification of a promising therapeutic target to the evaluation of

drug candidates in the various phases of clinical testing and regulatory review. Throughout, special emphasis is placed on the unique biology of pediatric malignancies and the medical and social needs of children and their families. In providing a firm grounding in the drug development process, the book will be of value to all with an interest in how medicines currently used to treat pediatric cancer were made available. This includes trainees as well as established practitioners and others participating in translational and clinical research in the academic setting.

Apoptosis and Cancer Chemotherapy

The past few years have witnessed an astonishing international effort that established the role of some 20 new molecules in apoptosis and added activation or suppression of apoptosis to the accepted biological functions of a great many others already familiar in cancer biology. Some of these molecules are receptors, transducing cytokine-mediated signals; others appear to intensify or diminish the risk that a compro mised cell will fire its apoptosis effector mechanism. All are of interest as potential targets for tumor therapy, and some may prove to be control points influenced in the pathogenesis of cancer and other diseases as diverse as viral infection, neurodegenerative disorders, and stroke. Sometimes, in the midst of these developments, a kind of euphoria ap pears to have gripped the research community, with the expectation that apoptosis will afford explanations to many unsolved questions in cellu lar regulation. This book, in a series of thoughtful and provocative ar ticles--some from established leaders in the field, and others from younger scientists--seeks to redress the balance.

Molecular Cancer Therapeutics

Molecular Cancer Therapeutics covers state-of-the-art strategies to identify and develop cancer drug target molecules and lead inhibitors for clinical testing. It provides a thorough treatment of drug target discovery, validation, and development. The introductory chapters provide an overview of pathways to discovery and development of molecular cancer therapeutics. Subsequent chapters progress from initial stages of drug target discovery to drug discovery, development, and testing in preclinical and clinical models. Topics include drug lead screening, drug-to-lead development, proof-of-concep.

Platinum and Other Heavy Metal Compounds in Cancer Chemotherapy

\"Papers ... presented in Verona, Italy during the tenth International Symposium on Platinum Coordination Compounds in Cancer Chemotherapy\"--P. vii.

Camptothecins New Anticancer Agents

This exciting new book presents the first comprehensive overview of clinical trials of camptothecins, a new class of anticancer agents. Camptothecins are synthetic and semisynthetic derivatives of a plant alkaloid that inhibit a cellular enzyme and trigger a cascade of events leading to programmed cell death. Special attention is given to the adverse effects of camptothecin treatment, as well as to prevention and control. The book boasts contributions by some of the most respected authorities in camptothecin research, who have Conducted much of the pre-clinical work which helped to renew interest in camptothecins Discovered and identified the natural product camptothecin and synthesized most of the anlogues Discovered the mechanism of camptothecin cytotoxicity

The Camptothecins

The impact of camptothecin and its derivatives on topoiomerase I in studies on nude mice points to anticancer potential that has not yet been fully realized and developed. The 1996 Academy conference research on the camptothecins launched major advances in understanding camptothecin's mechanism of

action; the development of new derivatives; and to a second generation of camptothecin-based chemotherapies. These proceedings papers unfold this potential in four areas: mechanisms of action for the natural compound and current derivatives; chemical possibilities of modifying camptothecin; novel derivatives; and novel routes of administration that enhance camptothecin's lactone ring stability, which appears vitally important for maintaining anticancer activity in humans. The science of camptothecin-base anticancer is balanced by clinical and pharmacology topics including drug resistance, new analogs and potential therapies for premature asthma and for bone marrow.

Stem Cell Basis of Cancer

It is a widely accepted paradigm in oncology that stem cells are the cells of origin of most, if not all, malignancies. Discoveries of mechanisms unique to stem cells will serve as molecular targets for new drug development and lead to new, more effective approaches to cancer therapy and chemoprevention. Stem Cell Basis of Cancer: Tumorigenesis and Drug Development makes available the current knowledge in the field, including concepts in tumoregenesis that involve stem cells in not only hematopoietic malignancies but solid tumors (including colon, lung, breast, and prostate). This book also addresses hereditary cancer syndromes as well as stem cells in novel therapeutic and chemopreventive approaches.

Recent Advances in Anti-Cancer Drug Discovery

Cancer is a life threatening disease and it can be treated with anti-cancer drugs. These drugs have been developed over the years, from natural substances primarily from minerals and green plants to chemically manufactured chemotherapeutic agents. New drug discovery is a time-consuming, difficult, challenging and costly process. Computer-aided drug discovery (CADD) has grown as a promising and potent technique for designing drugs that are quicker, less expensive and more successful. Recent developments in computational technologies for drug discovery have illustrated a major and remarkable impact on the design of anti-cancer drugs. These developments have also yielded useful insights into the field of cancer therapy. A few categories of drugs effective in the treatment of cancer include hormone therapies, steroids, immunotherapy or biological therapies, general chemotherapeutic drugs, and bisphosphonates. This book contains some path-breaking studies on anti-cancer drug discovery. From theories to research to practical applications, case studies related to all contemporary topics of relevance to this field have been included herein. This book will serve as a reference to a broad spectrum of readers.

Farnesyltransferase Inhibitors in Cancer Therapy

While drug therapies developed in the last 50 years have markedly improved the management of some types of cancers, treatment outcomes, and drug side-effects for the most common types remain unacceptable. However, recent technological advances are leading to improved therapies based on targeting distinct biological pathways in cancer cells.

Chemistry and Pharmacology of Anticancer Drugs

New Strategies Targeting Cancer Metabolism: Anticancer Drugs, Synthetic Analogues and Antitumor Agents presents up-to-date synthetic strategies for three categories of antimetabolites: antifolates, purines and pyrimidines, the main classes of antimetabolites which are integrated into various pharmaceutical agents. Many of these antimetabolites are considered potent chemotherapeutic agents which have great potential impact on medical research. These main classes of antimetabolites are used in the treatment of critical diseases including cancer, malignancies, autoimmune diseases, and many other non-malignant diseases. Antineoplastic drugs such as alkylating agents which have significant effects are described. Novel synthetic strategies for many anticancer alkylating agents including nitrogen mustards, chlorambucil, melphalan, ifosamide, oxaliplatin and temozolomide are explored. Natural products have offered some of the most significant drugs for treating cancer, as many drugs currently in clinical use are derived from natural products

as camptothecins, vinca alkaloids, and derivatives of podophyllotoxin. They provide a contribution that is essential for modern drug discovery and development. In this book, insights into a broad array of novel compounds are reviewed, well-recognized synthetic approaches are emphasized for further anticancer drug development and discovery, and the biological evaluation of novel synthesized compounds are included. This comprehensive reference is a valuable resource for medical chemists working in drug discovery and development, as well as pharmacologists and biochemists working in related fields. Provides the only resource dedicated to synthetic strategies of antimetabolites Features synthetic strategies for nucleosides and their analogues Includes coverage of purine-, pyrimidine- and antifolate-based anticancer drugs The most significant anticancer alkylating agents and natural products are demonstrated

New Strategies Targeting Cancer Metabolism

Camptothecin and Camptothecin Producing Plants: Botany, Chemistry, Anticancer Activity and Biotechnology provides updated information on camptothecin yielding plants, chemical diversity of camptothecin, extraction and exploitation methods, biosynthesis, biotechnological production and enhancement for drug delivery, and the pharmacological properties of the drugs. The book focuses on camptothecin anticancer properties based on recent developments of biotechnology. Topics emphasize anticancer activities, biosynthesis, potent derivatives currently undergoing experimental phases, and biotechnological methods to enhance the production. This book is a valuable source for cancer researchers, oncologists, biotechnologists, pharmacologists and members of the biomedical field who are interested in camptothecin and its applicability in cancer treatment. Provides information on camptothecin producing plants and their anticancer properties for the development of new treatments Discusses new applications of camptothecin based on recent biotechnology advancements Presents comprehensive information on the pharmacology of camptothecin for leveraging new anticancer drugs developments

Hematopoietic Growth Factors in Oncology

Accompanying CD-ROM in pocket at end of v. 2 contains a compact e-book version of v. 2.

Camptothecin and Camptothecin Producing Plants

The \"First International Conference on Traditional Chinese Medicine: Science, Regulation and Globalization\" was held from August 30 to September 2, 2000 at the University of Maryland at College Park, Maryland. There were approximately 250 participants from the Peoples Republic of China, Taiwan, Hong Kong and the United States. This objective of this conference was to promote international collaboration for the modernization of Traditional Chinese herbal medicines (TCM) and their introduction into the global health care system. It was mainly sponsored by the Ministry of Science and Technology of the People's Republic of China and the NllI National Center for Complementary and Alternative Medicine (NCCAM). It was organized by Dr. William Tai, then director of the Institute of Global Chinese Affairs at the University of Maryland and Dr. Yuan Lin, president of Marco Polo Technologies, Bethesda, MD. This conference was conceived by Dr. Tai two years earlier recognizing that this was an appropriate time and also the unique location of the University of Maryland. Today, there is a growing recognition of the of alternative medicine in modem societies and the rapid loss of importance knowledge about traditional methods for the treatment of the multitude of human illnesses found throughout the world. TCM has been in common use in China for thousands of years; and many of its formulations are well defined.

Reactive Oxygen Species in Cancer Therapy

Cancer Chemoprevention

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