

Viral Proteases And Antiviral Protease Inhibitor Therapy Proteases In Biology And Disease

Antiviral Strategies Protease Inhibitors in AIDS Therapy Viral Proteases and Antiviral Protease Inhibitor Therapy Cancer-Leading Proteases Antiretroviral Resistance in Clinical Practice **Protease-inhibitor-based Antiretroviral Therapy and Factors Associated with Viral Response and Mortality Among Southern African Children Less Than 2 Years of Age** **Viral Proteases and Their Inhibitors** **Handbook of Antimicrobial Resistance** **Aspartic Acid Proteases as Therapeutic Targets** **Proteases as Targets for Therapy** **Proteases as Targets for Therapy** **Activation of Viruses by Host Proteases** **Global HIV/AIDS Medicine** **Combination Therapy of Aids** **Innovative Approaches in Drug Discovery Successful Strategies for the Discovery of Antiviral Drugs** **Proteinase and Peptidase Inhibition** **Proteases in Human Diseases** **Fundamentals of HIV Medicine 2017** **Retroviral Proteases HIV and Disability** **HCV: The Journey from Discovery to a Cure** **Bioactive Food Peptides in Health and Disease** **Frontiers in Clinical Drug Research - Alzheimer Disorders** **The Risk of Cardiovascular Disease Among HIV Seropositive Adults on Protease Inhibitors Containing Antiretroviral Therapy** **Proteases-From Basic Structure to Function to Drug Design as Targeted Therapy** **Dengue and Zika: Control and Antiviral Treatment Strategies** **Elsevier's 2022 Intravenous Medications - E-Book** **Structure-based Design of Drugs and Other Bioactive Molecules** **Extracellular Targeting of Cell Signaling in Cancer** **Antiretroviral Therapy for HIV Infection in Infants and Children** **Davis's Drug Guide for Rehabilitation Professionals** **Human Immunodeficiency Virus Reverse Transcriptase** **HIV/AIDS Treatment and Care** **Cell Surface Proteases** **Structural Biology in Drug Discovery** **Antibiotic and Chemotherapy** **Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection** **AIDS Therapy** **Prodrugs**

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Combination Therapy of Aids Sep 12 2021 This book is the first to tackle, in a single treatise, a subject that has recently become a discipline in its own right, that of the combination antiretroviral therapy of AIDS. It is aimed at an audience of clinicians, researchers, public health workers, specialists or non-specialists in AIDS and particularly those who want to know how to optimally approach the treatment of AIDS. Combination drug treatment of AIDS is focussed from different angles and perspectives, historical, basic, economic, theoretical, virological, immunological, clinical and practical reasons for therapy failures are examined and strategies to prevent or overcome failing therapies are formulated. This book fills a gap in the current literature on clinical therapeutics. It should be particularly informative to those who want and need to know more about the current treatment of AIDS, with its successes and failures, but also with lessons and guidelines to affront these failures.

Proteases-From Basic Structure to Function to Drug Design as Targeted Therapy Aug 31 2020 In the two last decades, proteases have constituted one of the primary and important targets in drug discovery. The U.S. FDA has approved more than 12 protease therapies in the last 10 years, and a number of next-generation or completely new proteases are under clinical development. Protease inhibition strategies are one of the fastest expanding areas in the field of drugs that show considerable promise. This Special Issue will focus on the recent advances in the discovery and development of protease inhibitors, covering the synthesis of protease inhibitors, the design of new chemical entities acting as inhibitors of special/particular types of proteases, and their mode of actions (Frolova et al. 2020; Slapak et al. 2020; Künnapuu et al. 2021). In addition, the new applications of these interesting compounds/biomolecules and their limitations have been discussed and described (Wang et al. 2020; Bartosová-Sojková et al. 2021).

Innovative Approaches in Drug Discovery Aug 11 2021 Despite considerable technological advances, the pharmaceutical industry is experiencing a severe innovation deficit, especially in the discovery of new drugs. **Innovative Approaches in Drug Discovery: Ethnopharmacology, Systems Biology and Holistic Targeting** provides a critical review and analysis of health, disease and medicine, and explores possible reasons behind the present crisis in drug discovery. The authors illustrate the benefits of systems biology and pharmacogenomics approaches, and advocate the

expansion from disease-centric discovery to person-centric therapeutics involving holistic, multi-target, whole systems approaches. This book lays a path for reigniting pharmaceutical innovation through a disciplined reemergence of pharmacognosy, embracing open innovation models and collaborative, trusted public-private partnerships. With unprecedented advances made in the development of biomedically-relevant tools and technologies, the need is great and the time is now for a renewed commitment towards expanding the repertoire of medicines. By incorporating real-life examples and state-of-the-art reviews, this book provides valuable insights into the discovery and development strategies for professionals, academicians, and students in the pharmaceutical sciences. Analyzes the reasons behind historical drug failures to provide valuable insights on lessons learned Uses current scientific research to promote learning from traditional knowledge systems and through the integration of traditional and western medicines Discusses advances in technologies and systems biology to support the transition from formulation discovery to therapeutic discovery

HIV and Disability Feb 05 2021 The Social Security Administration (SSA) uses a screening tool called the Listing of Impairments to identify claimants who are so severely impaired that they cannot work at all and thus qualify for disability benefits. In this report, the Institute of Medicine (IOM) makes several recommendations for improving SSA's capacity for determining disability benefits more accurately and quickly using the HIV Infection Listings.

Cancer-Leading Proteases Jul 22 2022 Cancer-Leading Proteases: Structures, Functions, and Inhibition presents a detailed discussion on the role of proteases as drug targets and how they have been utilized to develop anticancer drugs. Proteases possess outstanding diversity in their functions. Because of their unique properties, proteases are a major focus of attention for the pharmaceutical industry as potential drug targets or as diagnostic and prognostic biomarkers. This book covers the structure and functions of proteases and the chemical and biological rationale of drug design relating to how these proteases can be exploited to find useful chemotherapeutics to fight cancers. In addition, the book encompasses the experimental and theoretical aspects of anticancer drug design based on proteases. It is a useful resource for pharmaceutical scientists, medicinal chemists, biochemists, microbiologists, and cancer researchers working on proteases. Explains the role of proteases in the biology of cancer Discusses how proteases can be used as potential drug targets or as diagnostic and prognostic biomarkers Covers a wide range of cancers and provides detailed discussions on protease examples

Retroviral Proteases Mar 06 2021 Methods included in this volume apply to the expression and characterization of retroviral proteases and their inhibitor/substrate design.

Activation of Viruses by Host Proteases Nov 14 2021 This book will give an overview on viruses undergoing proteolytic activation through host proteases. The chapters will be organized in three themed parts, the first part describing respective viruses and their characteristics in detail. In the second part the molecular and cellular biology of the proteases involved as well as their physiological functions will be further explored. The third part will contain a chapter on protease inhibitors that are promising tools for antiviral therapy. This book will engage scholars in virology and medical microbiology as well as researchers with an interest in enzymology and protein structure and function relationship.

Structure-based Design of Drugs and Other Bioactive Molecules May 28 2020 Drug design is a complex, challenging and innovative research area. Structure-based molecular design has transformed the drug discovery approach in modern medicine. Traditionally, focus has been placed on computational, structural or synthetic methods only in isolation. This one-of-a-kind guide integrates all three skill sets for a complete picture of contemporary structure-based design. This practical approach provides the tools to develop a high-affinity ligand with drug-like properties for a given drug target for which a high-resolution structure exists. The authors use numerous examples of recently developed drugs to present "best practice" methods in structurebased drug design with both newcomers and practicing researchers in mind. By way of a carefully balanced mix of theoretical background and case studies from medicinal chemistry applications, readers will quickly and efficiently master the basic skills of successful drug design. This book is aimed at new and active medicinal chemists, biochemists, pharmacologists, natural product chemists and those working in drug discovery in the pharmaceutical industry. It is highly recommended as a desk reference to guide students in medicinal and chemical sciences as well as to aid researchers engaged in drug design today.

HCV: The Journey from Discovery to a Cure Jan 04 2021 Hepatitis C is a liver disease caused by the hepatitis C virus (HCV) and infects approximately 75 million individuals worldwide. It is also one of the major causes of liver cancer and liver transplants. The elucidation of the HCV genome, and the development of a whole cell system to study the virus spurred the search for novel direct acting antiviral drugs to cure this disease. This global effort culminated in the development of direct acting antiviral drugs that led to cure rates approaching 100% in all patient populations after only 8-12 weeks of therapy. These efforts resulted in one of the greatest achievements in public health and provides the potential for eliminating HCV as a major disease worldwide. This volume is aimed at a broad audience of academic and industrial scientists interested in the discovery and development of drugs to treat viral diseases and those interested in reading about one of the most unique accomplishments in biomedical research. The volume will provide a one of a kind reference work that highlights the many efforts, from the discovery of the HCV virus, to the invention of breakthrough medicines and their use in the real world to cure patients. It is the companion book to the volume "HCV: The Journey from Discovery to a Cure - Volume II".

Protease-inhibitor-based Antiretroviral Therapy and Factors Associated with Viral Response and Mortality Among Southern African Children Less Than 2 Years of Age May 20 2022
AIDS Therapy Jul 18 2019 This is a reference book on major aspects of HI/AIDS care.

HIV/AIDS Treatment and Care Dec 23 2019 The WHO Regional Office for Europe has combined its 13 protocols on treatment of and care for people with HIV and AIDS in one volume. The protocols are the cornerstone of the strategic actions that WHO has taken as part of its contribution to achieving the goal of universal access to HIV/AIDS prevention, treatment, care and support services. The protocols were specifically developed for the entire WHO European Region. Together, they represent a comprehensive and evidence-based tool that offers health professionals clear and specific advice on diagnosing and managing a wide range of health issues related to HIV/AIDS for adults, adolescents and children, including antiretroviral treatment, the management of opportunistic infections, tuberculosis, hepatitis, injecting drug use, sexual and reproductive health, the prevention of mother-to-child HIV transmission, immunization, palliative care and post-exposure prophylaxis. [Ed.]

Cell Surface Proteases Nov 21 2019 *Cell Surface Proteases* provides a comprehensive overview of these important enzymes that catalyze the hydrolysis of a protein as it degrades to a simpler substance. In the 1990s, an explosion of new discoveries shed light on the role of cell surface proteases and extended it beyond degradation of extracellular matrix components to include its influence on growth factors, cell signaling, and other cellular events. This volume unites the scientific literature from across disciplines and teases out unified themes of interactions between cell surface proteases and interconnecting cell surface-related systems -- including integrins and other adhesion molecules. Scientists and students involved in developmental biology, cell biology and disease processes will find this an indispensable resource. * Provides an overview of the entire field of cell surface proteases in a single volume * Presents major issues and astonishing discoveries at the forefront of modern developmental biology and developmental medicine * A thematic volume in the longest-running forum for contemporary issues in developmental biology with over 30 years of coverage

Antiretroviral Resistance in Clinical Practice Jun 21 2022

Elsevier's 2022 Intravenous Medications - E-Book Jun 28 2020 Find the essential information you need to safely administer more than 400 intravenous drugs! For more than 45 years, Gahart's *Intravenous Medications: A Handbook for Nurses and Health Professionals* has been a trusted resource for comprehensive drug coverage, unparalleled accuracy, and an intuitive quick-access format. In addition to updated drug interactions, precautions, alerts, and patient teaching instructions for all existing IV drugs, the 2022 edition includes approximately 10 new monographs of the most recent IV drugs to be approved by the FDA. Administering intravenous drugs is a critical task — inaccurate or out-of-date information is not an option. Known as the #1 IV drug handbook on the market, and with its history of impeccable accuracy, Gahart's annual publication gives you the extra confidence and guidance you need to safely and effectively treat patients. Monographs on more than 400 IV drugs offer an impressive breadth of coverage that goes well beyond any comparable drug reference. Updated annual publication prevents you from referencing outdated information. Additional drug monographs are provided on the companion Evolve website. 45-year history of impeccable accuracy reinforces the importance of safe IV drug administration. Perfect depth of information equips you with everything that is needed for safe administration of IV drugs — nothing more, nothing less. Proven, clinically optimized format keeps all dosage information for each drug on either a single page or a two-page spread to prevent hand contamination by having to turn a page. Highlighted Black Box Warnings and relevant content make locating critical information fast and easy. Special circumstances in blue-screened text call attention to important circumstances that may not warrant Black Box Warnings. Life-stage dosage variances are highlighted for geriatric, pediatric, infant, and neonatal patients. Dilution and dosage charts within monographs provide quick access to essential clinical information. Convenient, alphabetical format organizes all drug monographs by generic name, allowing you to find any drug in seconds. NEW! Drug monographs for newly approved drugs by the FDA provide you with the most current drug information. Updates on drug interactions, precautions, alerts, and more have been made throughout the guide to reflect all changes to existing medications.

Fundamentals of HIV Medicine 2017 Apr 07 2021 Completely updated for 2017, *Fundamentals of HIV Medicine* is a comprehensive clinical care publication for the treatment of HIV/AIDS. Published by the American Academy of HIV Medicine, the book offers physicians, pharmacists, nurse practitioners, and other care providers the most up-to-date overview of the latest HIV treatments and guidelines. Embodying the AAHIVM's commitment to promoting uniform excellence in care of seropositive patients, *Fundamentals of HIV Medicine 2017* empowers health professionals to deliver standardized, life-sustaining treatment to the patients who need it most. It will serve as an essential clinical reference and provide valuable career enrichment to users across the spectrum of HIV care, treatment, and prevention.

Extracellular Targeting of Cell Signaling in Cancer Apr 26 2020 International experts present innovative therapeutic strategies to treat cancer patients and prevent disease progression. *Extracellular Targeting of Cell Signaling in Cancer* highlights innovative therapeutic strategies to treat cancer metastasis and prevent tumor progression. Currently, there are no drugs available to treat or prevent metastatic cancer other than non-selective, toxic chemotherapy. With contributions from an international panel of experts in the field, the book integrates diverse aspects of biochemistry, molecular biology, protein engineering, proteomics, cell biology, pharmacology, biophysics, structural biology, medicinal chemistry and drug development. A large class of proteins called kinases are enzymes required by cancer cells to grow, proliferate, and survive apoptosis (death) by the immune system. Two important kinases are MET and RON which are receptor tyrosine kinases (RTKs) that initiate cell signaling pathways outside the cell surface in response to extracellular ligands (growth factors.) Both kinases are oncogenes which are required by cancer cells to migrate away from the primary tumor, invade surrounding tissue and metastasize. MET and RON reside on both cancer cells and the support cells surrounding the tumor, called the microenvironment. MET and RON are activated by their particular ligands, the growth factors HGF and MSP, respectively. Blocking MET and RON kinase activation and downstream signaling is a promising therapeutic strategy for preventing tumor progression and metastasis. Written for cancer physicians and biologists as well as drug discovery and development teams in both industry and academia, this is the first book of its kind which explores novel approaches to inhibit MET and RON kinases other than traditional small molecule kinase inhibitors. These new strategies target key tumorigenic processes on the outside of the cell, such as growth factor activation by proteases. These unique strategies have promising potential as an improved alternative to kinase inhibitors, chemotherapy, or radiation treatment.

Frontiers in Clinical Drug Research - Alzheimer Disorders Nov 02 2020 *Frontiers in Clinical Drug Research - Alzheimer Disorders* is an e-Book series which covers recent topics related to understanding Alzheimer's disease (AD) that causes dementia and has a neurodegenerative effect on the brain. The disease affects memory, thought process, and language of affected individuals. Chapters in each volume focus on (Alzheimer Disorders) drug research with special emphasis on clinical trials, research on drugs in advanced stages of development and cure for Alzheimer's disease and related disorders. *Frontiers in Clinical Drug Research - Alzheimer Disorders* will be of particular interest to readers interested in drug therapy of this specific neurodegenerative condition and related brain disorders as the series provides relevant reviews written by experts in field of Alzheimer's Disease research. The fifth volume of this series features chapters covering critical discussions on AD management and new therapies. The topics reviewed in this volume include: - Current concepts in management of AD - The amyloid cascade hypothesis and stem cell-based AD

therapy - Phytochemicals targeting AD - Dementia screening in primary clinical care settings - Updates in dementia / AD clinical research and drug development

Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection Aug 19 2019 These guidelines provide guidance on the diagnosis of human immunodeficiency virus (HIV) infection, the use of antiretroviral (ARV) drugs for treating and preventing HIV infection and the care of people living with HIV. They are structured along the continuum of HIV testing, prevention, treatment and care. This edition updates the 2013 consolidated guidelines on the use of antiretroviral drugs following an extensive review of evidence and consultations in mid-2015, shared at the end of 2015, and now published in full in 2016. It is being published in a changing global context for HIV and for health more broadly.

Antiviral Strategies Oct 25 2022 A crucial issue for antiviral therapy is the fact that all antiviral substances rapidly select for resistance; thus, monitoring and overcoming resistance has become a most important clinical paradigm of antiviral therapy. This calls for cautious use of antiviral drugs and implementation of combination therapies. In parallel, efforts in drug discovery have to be continued to develop compounds with novel mode-of-action and activity against resistant strains. This book reviews the current status of antiviral therapy, from the roads to development of new compounds to their clinical use and cost effectiveness. Individual chapters address in more detail all available drug classes and outline new approaches currently under development.

Handbook of Antimicrobial Resistance Mar 18 2022 While many volumes have been written about various aspects of antimicrobial resistance, this book is a comprehensive reference work. All manifestations of resistance are addressed: viral; bacterial, parasitical and fungal are given dedicated sections. The underlining molecular mechanisms, which depend not only on the microbe but on the specific drug (target), are highly diverse. This work discusses and compares the biological, biochemical and structural aspects of resistance and its evolution.

Proteases as Targets for Therapy Jan 16 2022 With contributions by numerous experts

Antibiotic and Chemotherapy Sep 19 2019 The completely revised and updated New Edition of this respected resource presents globally-relevant coverage of all types of antimicrobial agents used in human medicine, providing authoritative guidance on the principles and practice of antimicrobial chemotherapy. In addition to full coverage of every commonly used antibiotic agent, it includes complete coverage of all antiviral, antiprotozoan and anthelmintic agents. And, its unique 3-part structure makes it easy to locate information: Part I covers general aspects of treatment; Part II reviews every agent, including antimicrobial activity, pharmacokinetics, clinical use, and available preparations; Part III details the treatment of particular infections. Discusses the increasing problem of multi-drug resistance and the wide range of new antiviral therapies now available for the treatment of HIV and other viral infections. Reviews all of the new antimicrobial agents in detail. Features more clinically focused sections on Pharmacokinetics. Details new antifungal therapies, including voriconazole, liposomal, and amphotericin B. Presents new tables on major drug interactions, placental transfer, and concentrations of agents in breast milk. Features new sections on liver failure, drug development and licensing, and the implications of xenotransplantation. Presents expanded coverage of Quinolone as well as new antimalarial combination therapies. Offers cross-references to key web sites, for up-to-date information on treatment and drug resistance.

The Risk of Cardiovascular Disease Among HIV Seropositive Adults on Protease Inhibitors Containing Antiretroviral Therapy Oct 01 2020 Master's Thesis from the year 2016 in the subject Medicine - Epidemiology, grade: 70, University of Zambia, language: English, abstract: The objective of this study was to determine the risk associated with the use of PIs- containing ART in the development of CVD among HIV seropositive adult's at the Adult Infectious Disease Centre University Teaching Hospital (UTH), Zambia. The burden of cardiovascular disease (CVD) in Sub-Saharan Africa is rising in the background of a high prevalence of infectious diseases including Human Immune Deficiency Virus (HIV). The use of certain Antiretroviral Therapy (ART) drugs has been shown to cause dyslipidaemia, with little known about the burden of dyslipidaemia in the presence of ART particularly Protease Inhibitors (PIs) in Sub-Saharan Africa. The study reviewed records of patients on PIs and non- PIs between 2008 and 2016. The primary end point of the study was CVD and consisted of a total sample of 281, with PI consisting of 112 and 169 for the non PI group. A log-binomial model was used to assess covariates, while Kaplan Meier method for probability of survival to CVD and time to CVD comorbidity were utilised.

Proteases in Human Diseases May 08 2021 This book bridges the gap between fundamental research and biomedical and pharmacological applications on proteases. It represents a comprehensive overview of the multifaceted field of proteases in cellular environment and highlights the recently elucidated functions of complex proteolytic systems in different diseases. Several established investigators have elucidated the crucial role of proteases in biological processes, including how proteolytic function and regulation can be combined to develop new strategies of therapeutic interventions. Proteases form one of the largest and most diverse families of enzymes known. It is now clear that proteases are involved in every aspect of life functions of an organism. Under physiological conditions, proteases are regulated by their endogenous inhibitors; however, when the activity of proteases is not regulated appropriately, disease processes can result in. So, there is absolute need for a stringent control of proteolytic activities in cells and tissues. Dysregulation of proteases may cause derangement of cellular signalling network resulting in different pathophysiological conditions such as vascular remodelling, atherosclerotic plaque progression, ulcer and rheumatoid arthritis, Alzheimer disease, cancer metastasis, tumor progression and inflammation. Additionally, many infective microorganisms require proteases for replication or use proteases as virulence factors, which have facilitated the development of protease-targeted therapies for a variety of parasitic diseases.

Antiretroviral Therapy for HIV Infection in Infants and Children Mar 26 2020

Aspartic Acid Proteases as Therapeutic Targets Feb 17 2022 In this ground-breaking practical reference, the family of aspartic acid proteases is described from a drug developer's perspective. The first part provides a general introduction to the family of aspartic acid proteases, their physiological functions, molecular structure and inhibition. Parts two to five present various case studies of successful protease inhibitor drug design and development, as well as current and potential uses of such inhibitors in pharmaceutical medicine, covering the major therapeutic targets HIV-1 protease, renin, beta-secretase, gamma-secretase, plasmepsins and fungal proteases. A ready reference aimed primarily at professionals in the pharmaceutical industry, as well as for anyone studying proteases and their function.

Viral Proteases and Their Inhibitors Apr 19 2022 *Viral Proteases and Their Inhibitors* provides a thorough examination of viral proteases from their molecular components, to therapeutic

applications. As information on three dimensional structures and biological functions of these viral proteases become known, unexpected protein folds and unique mechanisms of proteolysis are realized. This book investigates how this facilitates the design and development of potent antiviral agents used against life-threatening viruses. Users will find descriptions of each virus that detail the structure and function of viral proteases, discuss the design and development of inhibitors, and analyze the structure-activity relationships of inhibitors. This book is ideal for biochemists, virologists and those working on antiviral agents. Provides comprehensive, state-of-the-art coverage of virus infections, the virus lifecycle, and mechanisms of protease inhibition. Analyzes structure-activity relationships of inhibitors of each viral protease. Presents an in-depth view of the structure and function of viral proteases.

Davis's Drug Guide for Rehabilitation Professionals Feb 23 2020 A one-of-a-kind guide specifically for rehabilitation specialists! A leader in pharmacology and rehabilitation, Charles Ciccone, PT, PhD offers a concise, easy-to-access resource that delivers the drug information rehabilitation specialists need to know. Organized alphabetically by generic name, over 800 drug monographs offer the most up-to-date information on drug indications, therapeutic effects, potential adverse reactions, and much more! A list of implications for physical therapy at the end of each monograph helps you provide the best possible care for your patients. It's the perfect companion to *Pharmacology in Rehabilitation, 4th Edition!*

Proteinase and Peptidase Inhibition Jun 09 2021 Cellular proteinases and their physiological role in normal and disease states have been the subject of great interest over recent decades. At present, specific protease inhibitors are exploited both as tools in unraveling the role of individual proteinases in particular cellular processes and for the development of chemotherapeutic agents for the *Human Immunodeficiency Virus Reverse Transcriptase* Jan 24 2020 The Reverse Transcriptase (RT) of Human Immunodeficiency Virus Type 1 (HIV-1) arguably ranks amongst one of the most extensively studied retroviral enzymes. Heterologous expression and purification of HIV-1 RT in the early eighties, approval of the first nucleoside analogue RT inhibitor (NRTI) in 1987, discovery of resistance to RT inhibitors, approval of the first non-nucleoside analogue RT inhibitor (NNRTI) in 1996 and the various crystal structures of RT with and without bound substrate(s) and/or inhibitors represent only a few of the important milestones that describe the a bench-to-bedside success in the continuing effort to combat HIV-1 infection and its consequences. Nucleoside and nonnucleoside RT inhibitors remain important components in frequently used drug regimens to treat the infection. RT inhibitors also play important roles in recently validated strategies to prevent transmission of the virus. The relevance of HIV-1 RT as a drug target has simultaneously triggered interest in basic research studies aimed at providing a more detailed understanding of interactions between proteins, nucleic acids, and small molecule ligands in general terms. In light of the ever-growing knowledge on structure and function of HIV-1 RT, this enzyme serves as a valuable "model system" in efforts to develop novel experimental tools and to explain biochemical processes. This monograph is designed to provide an overview of important aspects in past and current HIV-1 RT research, with focus on mechanistic aspects and translation of knowledge into drug discovery and development. The first section includes chapters with emphasis placed on the coordination of the RT-associated DNA polymerase and ribonuclease H (RNase H) activities. The second covers mechanisms of action and future perspectives associated with NRTIs and NNRTIs, while the third section includes chapters focusing on novel strategies to target the RT enzyme. Chapters of the final part are intended to discuss mechanisms involved in HIV variability and the development of drug resistance. We hope that these contributions will stimulate interest, and encourage research aimed at the development of novel RT inhibitors. The lack of bona fide RNase H inhibitors with potent antiviral activity provides an example for challenges and opportunities in the field.

Viral Proteases and Antiviral Protease Inhibitor Therapy Aug 23 2022 The 8th volume in the *Proteases in Biology and Disease* series focuses on the role of proteases in virus function and their potential as anti-viral targets. Viral infections are still difficult to treat and some remained life-threatening diseases in spite of antiviral drug research over decades. Proteases are still regarded as an Achilles' heel of the pathogens and, thus, protease inhibitors may help to handle the known and the emerging viral threats. The book discusses viral proteases of the most important pathogenic viruses, responsible for severe diseases: AIDS, SARS, Hepatitis, Cytomegalovirus, T-cell lymphotropic virus, Picornavirus. This book focuses specifically on the viral proteases, crucial prerequisites for viral entry into cells and viral replication. Viral proteases represent an important pharmaceutical target. The current stage of protease inhibitor development and therapy are summarised and discussed by experts in the field. This volume represents a timely and valuable continuation of the *Proteases in Biology and Disease* series. The reader will learn the potential for proteases as targets for effective anti-virals. This book will be a valuable source of information on viral proteases and provoke further research in this important field.

Prodrugs Jun 16 2019 These volumes represent a comprehensive guide to prodrugs. They guide the reader through the current status of the prodrug concept and its many applications and highlight its many successes in overcoming formulation and delivery of problematic drugs. Replete with examples of approved and marketed prodrugs, these volumes introduce the topic to the novice as well as professional in the design of prodrugs.

Successful Strategies for the Discovery of Antiviral Drugs Jul 10 2021 The antiviral therapeutic area continues to rapidly generate meaningful new chemical entities; for example, for HIV alone more than 25 drugs have been approved, and in the next few years many individual drugs and single tablet regimens will be approved for the treatment of hepatitis C virus infection. The increasing success in the antiviral area could be due to targeting drugs at "non-self" genomes and to the patient population that is tolerant of manageable side effects and adaptable to inconvenient dosing. Aimed at medicinal chemists and emerging drug discovery scientists, the book is organized according to the various strategies deployed for the discovery and optimization of initial lead compounds. This book focuses on capturing tactical aspects of problem solving in antiviral drug design, an approach that holds special appeal for those engaged in antiviral drug development, but also appeals to the broader medicinal chemistry community based on its focus on tactical aspects of drug design.

Proteases as Targets for Therapy Dec 15 2021 This volume is the first to combine latest information on viral, microbial and cellular proteolytic enzymes as potential targets for human therapeutics. Proteases control a large array of physiological reactions, and are involved in a variety of pathological processes for which effective medications are currently needed and/or being sought after. Although protease inhibitors have been investigated for many years, few have been employed therapeutically. Recent breakthrough by HIV protease inhibitors as therapeutic drugs has re-encouraged the search for inhibitors of other proteolytic enzymes. Klaus von der Helm, who described the first viral protease has brought leading experts together to discuss not only the success

and problems of clinical use and continuing prospects, but to review further potential drug targets. This volume provides detailed information and evaluations of key viral, bacterial, fungal, and cellular proteases as potential future drug candidates.

Global HIV/AIDS Medicine Oct 13 2021 HIV/AIDS management poses many different challenges around the world, and the therapies available in the West are often not economically feasible in developing countries. This new book is the first to address the myriad of clinical difficulties faced by health practitioners worldwide in managing HIV/AIDS. Edited by the same authorities responsible for the highly respected reference "The Medical Management of AIDS," with Associate Editors that include the President of the International AIDS Society and a preeminent opinion leader in the fight against AIDS in Africa, and authored by a "who's who" of current global experts on HIV and AIDS medicine, this visionary text presents all the practical, indispensable information that clinicians everywhere need to offer their patients the best possible care. Access reliable, up-to-the-minute guidance that addresses the realities of HIV/AIDS management in your geographical region, thanks to contributions from a global cast of renowned expert clinicians and researchers. Locate the clinically actionable information you need quickly with an organization that mirrors the current state of the AIDS epidemic and the different needs of Western vs. developing-world patients and clinicians. Diagnose AIDS manifestations confidently by comparing them to full-color clinical images. Review essential data quickly through numerous at-a-glance tables.

Dengue and Zika: Control and Antiviral Treatment Strategies Jul 30 2020 This contributed volume contains 25 chapters from leading international scientists working on dengue and Zika viruses, who came together in Praia do Tofo in Mozambique to discuss the latest developments in the fields of epidemiology, pathogenesis, structural virology, immunology, antiviral drug discovery and development, vaccine efficacy, and mosquito control programs. The meeting venue offered an opportunity to discuss current research on these flaviviruses in an idyllic setting, and also to develop first-hand appreciation of the issues in infectious diseases facing developing countries and of the research gaps in Africa. For readers, who should include basic and clinical researchers in the field and public health professionals, the chapters are organized to provide a comprehensive overview of the various topics in current dengue and Zika virus research. A unique feature of the proceedings of this meeting is the inclusion of the discussions that took place following presentations. These have been transcribed and appended to the end of the relevant chapters, and they form the "salt in the soup" of this book.

Bioactive Food Peptides in Health and Disease Dec 03 2020 "Bioactive Food Peptides in Health and Disease" highlights recent developments on bioactive food peptides for the promotion of human health and the prevention/management of chronic diseases. The book provides a comprehensive revision of bioactive peptides obtained from both animal and plant food sources. Aspects related to their bioactivity, mechanism of action, and bioavailability are extensively described along the different chapters. Also, the chapters describe the impact of bioactive peptides on the physiological absorption, regulation and disease prevention. The book also covers the recent technological advances for the production of food peptides. Bioactive Food Peptides in Health and Disease provides updated and interesting information, being a good reference book for nutritional and food scientists, biochemists, industry producers, and consumers.

Protease Inhibitors in AIDS Therapy Sep 24 2022 Details the evolution of HIV protease inhibitors from molecular development through medical applications! Considering the latest class of revolutionary drugs fighting against HIV infection and AIDS, this comprehensive reference thoroughly examines the development and properties of HIV protease inhibitors from clinical and scientific perspectives, discussing how protease inhibitors changed the FDA approval process-enhancing the collaboration between regulatory authorities and drug developers. Spotlights protease inhibitors as the cornerstone drugs of the first HAART regimens-key components of long-term viral suppression and immune restoration, and in secondary and tertiary regimens! Evaluating protease inhibitors as therapeutic options and research tools, Protease Inhibitors in AIDS Therapy reviews the impact of advances in recombinant DNA technology for understanding and treating HIV and AIDS highlights a variety of strategies and techniques for drug discovery and development illustrated by success stories of pharmaceutical companies and biotechnology start-up firms summarizes the pharmacokinetics, metabolism, and drug interactions of protease inhibitors details preliminary clinical studies on oral bioavailability, pharmacokinetic profiling, efficacy, resistance, and tolerability describes available efficacy data for marketed inhibitors and those in clinical development reports on efforts to manage antiviral resistance in the clinic and improve patient adherence to complex drug therapy and more! Containing more than 600 helpful literature references, drawings, photographs, and tables, Protease Inhibitors in AIDS Therapy serves for an essential reference for infectious disease specialists, epidemiologists, virologists, immunologists, pharmacologists, medicinal chemists and biochemists, microbiologists, hematologists, hepatologists, and medical students in these disciplines.

Structural Biology in Drug Discovery Oct 21 2019 With the most comprehensive and up-to-date overview of structure-based drug discovery covering both experimental and computational approaches, Structural Biology in Drug Discovery: Methods, Techniques, and Practices describes principles, methods, applications, and emerging paradigms of structural biology as a tool for more efficient drug development. Coverage includes successful examples, academic and industry insights, novel concepts, and advances in a rapidly evolving field. The combined chapters, by authors writing from the frontlines of structural biology and drug discovery, give readers a valuable reference and resource that: Presents the benefits, limitations, and potentiality of major techniques in the field such as X-ray crystallography, NMR, neutron crystallography, cryo-EM, mass spectrometry and other biophysical techniques, and computational structural biology Includes detailed chapters on druggability, allostery, complementary use of thermodynamic and kinetic information, and powerful approaches such as structural chemogenomics and fragment-based drug design Emphasizes the need for the in-depth biophysical characterization of protein targets as well as of therapeutic proteins, and for a thorough quality assessment of experimental structures Illustrates advances in the field of established therapeutic targets like kinases, serine proteinases, GPCRs, and epigenetic proteins, and of more challenging ones like protein-protein interactions and intrinsically disordered proteins