

Molecular Virology Of Human Pathogenic Viruses

Molecular Medical Microbiology, Three-Volume Set
Fenner and White's Medical Virology
Human Tumor Viruses
Viruses
Retroviruses
Molecular Detection of Human Viral Pathogens
Viral Pathogenesis
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A Planet of Viruses

Molecular Medical Microbiology, Three-Volume Set

A clever, accessible overview that uses a survey of 12 of the most common viral infections, to teach the fundamental principles of human virology.

Fenner and White's Medical Virology

Principles of Virology, the leading virology textbook in use, is an extremely valuable and highly informative presentation of virology at the interface of modern cell biology and immunology. This text utilizes a uniquely rational approach by highlighting common principles and processes across all viruses. Using a set of representative viruses to illustrate the breadth of viral complexity, students are able to understand viral reproduction and pathogenesis and are equipped with the necessary tools for future encounters with new or understudied viruses. This fifth edition was updated to keep pace with the ever-changing field of virology. In addition to the beloved full-color illustrations, video interviews with leading scientists, movies, and links to exciting blogposts on relevant topics, this edition includes study questions and active learning puzzles in each chapter, as well as short descriptions regarding the key messages of references of special interest. Volume I: Molecular Biology focuses on the molecular processes of viral reproduction, from entry through release. Volume II: Pathogenesis and Control addresses the interplay between viruses and their host organisms, on both the micro- and macroscale, including chapters on public health, the immune response, vaccines and other antiviral strategies, viral evolution, and a brand new chapter on the therapeutic uses of viruses. These two volumes can be used for separate courses or together in a single course. Each includes a unique appendix, glossary, and links to internet resources. Principles of Virology, Fifth Edition, is ideal for teaching the strategies by which all viruses reproduce, spread within a host, and are maintained within populations. This edition carefully reflects the results of extensive vetting and feedback received from course

instructors and students, making this renowned textbook even more appropriate for undergraduate and graduate courses in virology, microbiology, and infectious diseases.

Human Tumor Viruses

Viruses interact with host cells in ways that uniquely reveal a great deal about general aspects of molecular and cellular structure and function. *Molecular and Cellular Biology of Viruses* leads students on an exploration of viruses by supporting engaging and interactive learning. All the major classes of viruses are covered, with separate chapters for their replication and expression strategies, and chapters for mechanisms such as attachment that are independent of the virus genome type. Specific cases drawn from primary literature foster student engagement. End-of-chapter questions focus on analysis and interpretation with answers being given at the back of the book. Examples come from the most-studied and medically important viruses such as HIV, influenza, and poliovirus. Plant viruses and bacteriophages are also included. There are chapters on the overall effect of viral infection on the host cell. Coverage of the immune system is focused on the interplay between host defenses and viruses, with a separate chapter on medical applications such as anti-viral drugs and vaccine development. The final chapter is on virus diversity and evolution, incorporating contemporary insights from metagenomic research. Key selling feature: Readable but rigorous coverage of the molecular and cellular biology of viruses Molecular mechanisms of all major groups, including plant viruses and bacteriophages, illustrated by example Host-pathogen interactions at the cellular and molecular level emphasized throughout Medical implications and consequences included Quality illustrations available to instructors Extensive questions and answers for each chapter

Viruses

Despite being recognized and fought against over countless centuries, human viral pathogens continue to cause major public health problems worldwide—killing millions of people and costing billions of dollars in medical care and lost productivity each year. With contributions from specialists in their respective areas of viral pathogen research, *Molecular Detection of Human Viral Pathogens* provides a reliable reference on molecular detection and identification of major human viral pathogens. Each chapter briefly reviews the classification, epidemiology, clinical features, and diagnosis of one related viral pathogen or a group of them. The clinical sample collection and preparation procedures are outlined, and a selection of representative stepwise molecular detection protocols is covered. The chapters conclude with a discussion on further research requirements relating to improved diagnosis. With its judicious selection of streamlined, ready-to-use protocols for major human viral pathogens—including commercial kits—*Molecular Detection of Human Viral Pathogens* is an indispensable tool for medical, veterinary, and industrial laboratory scientists involved in virus determination.

Retroviruses

Essential Human Virology is written for the undergraduate level with case studies integrated into each chapter. The structure and classification of viruses will be covered, as well as virus transmission and virus replication strategies based upon type of viral nucleic acid. Several chapters will focus on notable and recognizable viruses and the diseases caused by them, including influenza, HIV, hepatitis viruses, poliovirus, herpesviruses, and emerging and dangerous viruses. Additionally, how viruses cause disease, or pathogenesis, will be highlighted during the discussion of each virus family, and a chapter on the immune response to viruses will be included. Further, research laboratory assays and viral diagnosis assays will be discussed, as will vaccines, anti-viral drugs, gene therapy, and the beneficial uses of viruses. By focusing on general virology principles, current and future technologies, familiar human viruses, and the effects of these viruses on humans, this textbook will provide a solid foundation in virology while keeping the interest of undergraduate students. Focuses on the human diseases and cellular pathology that viruses cause Highlights current and cutting-edge technology and associated issues Presents real case studies and current news highlights in each chapter Features dynamic illustrations, chapter assessment questions, key terms, and summary of concepts, as well as an instructor website with lecture slides, test bank, and recommended activities

Molecular Detection of Human Viral Pathogens

Henipaviruses form a new genus of emerging paramyxoviruses that are the deadliest human pathogens within the Paramyxoviridae family. This volume deals with the many facets of henipavirus biology, and covers our current understanding regarding the ecology, molecular virology, and pathogenesis of henipavirus infections. It is an international effort written by a multidisciplinary panel of experts at the front lines of research into this lethal emerging group of paramyxoviruses. The first section introduces the epidemiology and ecology of Nipah and Hendra viruses in their respective endemic areas, including a first-hand account of the discovery of Nipah virus during its initial outbreak in Malaysia; the next section documents the molecular virology of henipaviruses, and the substantial advances made towards understanding the unique features of henipavirus entry and tropism; and this is followed by accounts of the clinical and pathologic features of henipavirus infections in their human and naturally infected animal hosts. The next sections on pathogenesis provide a comprehensive reference on how henipaviruses counteract the innate immune system, and the relevant pathogenic features in animal challenge models developed to test potential therapeutic strategies. The final sections describe our current and future capabilities for diagnosis and control, including an account of potentially effective immunization strategies that are currently being tested. This book will not only serve as a useful reference for the henipavirus field; it will be useful to basic and animal virologists, ecologists, epidemiologists, physicians, and others interested in emerging infectious viral diseases, as it showcases the multidisciplinary efforts required to understand the genesis, spread and hopefully, control, of a group of lethal emerging zoonotic pathogens.

Viral Pathogenesis

Viruses: From Understanding to Investigation provides students with a map for lifetime learning by presenting the definition and unique characteristics of viruses, including major topics, such as the virus lifecycle, structure, taxonomy, evolution, history, host-virus interactions

and methods to study viruses. In addition, the book assesses the connections between, and among, the aforementioned topics, providing an integrated approach and in-depth understanding of how viruses work. Employs a comparative strategy to emphasize unique structural and molecular characteristics that inform transmission, disease processes, vaccine strategies and host responses Presents a review of host cell and molecular biology and the immune system Features topical areas of research, including genomics in virus discovery, the virome, and beneficial interactions between viruses and their hosts Includes text boxes throughout with experimental approaches used by virologists Covers learning objectives for each chapter, methods and advances, question sets, quizzes and a glossary

Biosafety in Microbiological and Biomedical Laboratories

Emerging and Reemerging Viral Pathogens: Applied Virology Approaches Related to Human, Animal and Environmental Pathogens, Volume Two presents new research information on viruses and their impact on the scientific community. It provides a reference book on certain viruses in humans, animals and vegetal, along with a comprehensive discussion on interspecies interactions. The book then looks at the drug, vaccine and bioinformatical strategies that can be used against these viruses, giving the reader a clear understanding of transmission. The book's end goal is to create awareness that the appearance of newly transmissible pathogens is a global risk that requires shared/adoptable policies for prevention and control. Covers most emerging viral disease in humans, animals and plants Provides the most advanced tools and techniques in molecular virology and the modeling of viruses Creates awareness that the appearance of new transmissible pathogens is a global risk Highlights the need to adopt shared policies for the prevention and control of infectious diseases

Molecular Virology of Human Pathogenic Viruses

The molecular age has brought about dramatic changes in medical microbiology, and great leaps in our understanding of the mechanisms of infectious disease. Molecular Medical Microbiology is the first book to synthesise the many new developments in both molecular and clinical research in a single comprehensive resource. This timely and authoritative 3-volume work is an invaluable reference source of medical bacteriology. Comprising over 100 chapters, organised into 17 major sections, the scope of this impressive work is wide-ranging. Written by experts in the field, chapters include cutting edge information, and clinical overviews for each major bacterial group, in addition to the latest updates on vaccine development, molecular technology and diagnostic technology. * The first comprehensive and accessible reference on Molecular Medical Microbiology * Two color presentation throughout * Full colour plate section * Fully integrated and meticulously organised * In depth discussion of individual pathogenic bacteria in a system-oriented approach * Includes a clinical overview for each major bacterial group * Presents the latest information on vaccine development, molecular technology and diagnostic technology * Extensive indexing and cross-referencing throughout * Over 100 chapters covering all major groups of bacteria * Written by an international panel of authors expert in their respective disciplines * Over 2300 pages in three volumes

A Dictionary of Virology

Viral Pathogenesis: From Basics to Systems Biology, Third Edition, has been thoroughly updated to cover topical advances in the evolving field of viral pathogenesis, while also providing the requisite classic foundational information for which it is recognized. The book provides key coverage of the newfound ability to profile molecular events on a system-wide scale, which has led to a deeper understanding of virus-host interactions, host signaling and molecular-interaction networks, and the role of host genetics in determining disease outcome. In addition, the content has been augmented with short chapters on seminal breakthroughs and profiles of their progenitors, as well as short commentaries on important or controversial issues in the field. Thus, the reader will be given a view of virology research with perspectives on issues such as biomedical ethics, public health policy, and human health. In summary, the third edition will give the student a sense of the exciting new perspectives on viral pathogenesis that have been provided by recent developments in genomics, computation, modeling, and systems biology. Covers all aspects of viral infection, including viral entry, replication, and release, as well as innate and adaptive immunity and viral pathogenesis Provides a fresh perspective on the approaches used to understand how viruses cause disease Features molecular profiling techniques, whole genome sequencing, and innovative computational methods Highlights the use of contemporary approaches and the insights they provide to the field

How Pathogenic Viruses Think

This volume in the Handbook of Clinical Neurology series provides a complete review of the history, science and current state of neurovirology. It covers the science and clinical presentation, diagnosis, and treatment of viruses of the brain and central nervous system, and is a trusted resource for scholars, scientists, neuroscientists, neurologists, virologists, and pharmacologists working on neurovirology. Neurovirology has been significantly bolstered by modern technologies such as PCR and MRI with direct impact on isolating viruses and advancing therapeutics based on molecular medicine. These advances are particularly important today with the introduction of emerging and re-emerging diseases such as HIV/AIDS, Nipah encephalitis and the appearance of West Nile encephalitis in the western hemisphere. Detailed coverage of neurovirology from the basic science to clinical presentation Covers advances in neurovirology via polymerase chain reaction (PCR) and MRI technology Covers emerging and re-emerging diseases including HIV/AIDS, Nipah encephalitis, and the appearance of West Nile encephalitis in the western hemisphere

The Picornaviruses

The explosion in clinical testing has been especially rapid in virology, where emerging viruses and growing numbers of viral infections are driving advances. The Guide to Clinical and Diagnostic Virology offers a digestible view of the breadth and depth of information related to clinical virology, providing a practical, working knowledge of the wide array of viruses that cause human disease. Introductory chapters cover the basics of clinical virology and laboratory diagnosis of infections, including virus structure, life cycle, transmission, taxonomy, specimen types and handling, and a comparison of assays used for detection. Detailed sections on important topics include Viral pathogens and their clinical presentations Diagnostic assays and techniques, including culture-based, immunological, and molecular Prevention and management

of viral infections, with guidance on biosafety, vaccines, and antiviral therapies The regulatory environment for laboratory testing, including regulatory requirements and assay performance and interpretation Critical concepts are carefully curated and concisely summarized and presented with detailed illustrations that aid comprehension, along with important highlights and helpful hints. These features, plus question sections that reinforce significant ideas and key concepts, make this an invaluable text for anyone looking for an accessible route through clinical and diagnostic virology. Laboratory technologists, medical students, infectious disease and microbiology fellows, pathology residents, researchers, and everyone involved with viruses in the clinical setting will find the Guide to Clinical and Diagnostic Virology an excellent text as well as companion to clinical virology references.

Guide to Clinical and Diagnostic Virology

"Based on the author's experiences teaching virology for more than 35 years, *Virology: Molecular Biology and Pathogenesis* enables readers to develop a deep understanding of fundamental virology by emphasizing principles and discussing viruses in the context of virus families. Moreover, individual virus families are examined within the context of the Baltimore classification system, a key unifying theme that allows readers to assume basic facts about the replication strategy of a virus based on the nature of its genome."--BOOK JACKET.

How Pathogenic Viruses Work

Retroviruses comprise a diverse family of enveloped RNA viruses, remarkable for their use of reverse transcription of viral RNA into linear double stranded DNA during replication and the subsequent integration of this DNA into the genome of the host cell. Members of this family include important pathogens such as HIV-1, feline leukemia, and several cancer-causing viruses. However, interest in these viruses extends beyond their disease-causing capabilities. For example, research in this area led to the discovery of oncogenes, a major advance in the field of cancer genetics. Studies of retroviruses have contributed greatly to our understanding of mechanisms that regulate eukaryotic gene expression. In addition, retroviruses are proving to be valuable research tools in molecular biology and have been used successfully in gene therapy (e.g. to treat X-linked severe combined immunodeficiency). Written by the top retroviral specialists, this book reviews the genomics, molecular biology, and pathogenesis of these important viruses, comprehensively covering all the recent advances. Topics include: host and retroelement interactions * endogenous retroviruses * retroviral proteins and genomes * viral entry and uncoating * reverse transcription and integration * transcription * splicing and RNA transport * pathogenesis of oncoviral infections * pathogenesis of immunodeficiency virus infections * retroviral restriction factors, molecular vaccines, and correlates of protection * gammaretroviral and lentiviral vectors * non-primate mammalian and fish retroviruses * simian exogenous retroviruses * and HTLV and HIV. It is essential reading for every retrovirologist and it is a recommended text for all virology and molecular biology laboratories.

Neurovirology

Molecular Detection of Animal Viral Pathogens presents expert summaries on state-of-the-art diagnostic approaches for major animal viral pathogens, with a particular emphasis on identification and differentiation at the molecular level. Written by specialists in related research areas, each chapter provides a concise overview of an individual virus

Fundamentals of Molecular Virology, 2nd Edition

This third edition of A Dictionary of Virology offers an authoritative, concise, and up-to-date list of all viruses affecting vertebrate species, from humans to fish. It has been completely revised since the 1997 edition to include 25% more entries, including many completely new viruses. The entries have been restructured so that all viruses are listed and classified in accordance with the standards set by the 7th Report of the ICTV. The extensive cross-referencing and illustrative tables further enhance the utility of this reference.

Human Virology

The essential reference of clinical virology Virology is one of the most dynamic and rapidly changing fields of clinical medicine. For example, sequencing techniques from human specimens have identified numerous new members of several virus families, including new polyomaviruses, orthomyxoviruses, and bunyaviruses. Clinical Virology, Fourth Edition, has been extensively revised and updated to incorporate the latest developments and relevant research. Chapters written by internationally recognized experts cover novel viruses, pathogenesis, epidemiology, diagnosis, treatment, and prevention, organized into two major sections: Section 1 provides information regarding broad topics in virology, including immune responses, vaccinology, laboratory diagnosis, principles of antiviral therapy, and detailed considerations of important organ system manifestations and syndromes caused by viral infections. Section 2 provides overviews of specific etiologic agents and discusses their biology, epidemiology, pathogenesis of disease causation, clinical manifestations, laboratory diagnosis, and management. Clinical Virology provides the critical information scientists and health care professionals require about all aspects of this rapidly evolving field.

Virology

Virology is a clear and accessible introduction to this fast moving field, providing a comprehensive resource enabling students to understand the key concepts surrounding this exciting subject. The authors have produced a text that stimulates and encourages the student through the extensive use of clear, colour-coded diagrams. Taking a modern approach to the subject, the relevance of virology to everyday life is clearly emphasised and discussion on emerging viruses, cancer, vaccines, anti-viral drugs gene vectors and pesticides is included. This title: Provides an introduction to the theories behind the origins of viruses and how they are evolving with discussion on emerging viruses Includes numerous diagrams with standard colour coding for different types of molecule such as DNA, messenger RNA, other virus RNA's proteins □ all diagrams are carefully developed and clearly labelled to enhance student understanding Features self-contained descriptions of the

complete replication cycles of a selection of viruses Introduces the relevance of virology to the modern world including the latest developments in the field - HIV, Foot and Mouth disease, Ebola, SARS and MMR Presents summary boxes, further reading and an associated website to include the latest developments Virology is an essential textbook for all undergraduate students of biology, microbiology and biomedical sciences taking courses in virology. It is also an invaluable resource for MSc level students who have previously done little or no virology and are looking for an accessible introduction to the subject.

Viral Gastroenteritis

Principles of Molecular Virology, Third Edition provides an essential introduction to modern virology in a clear and concise manner. It is a highly enjoyable and readable text with numerous illustrations that enhance the reader's understanding of important principles. This edition has been updated and revised with new figures and text. New to the Third Edition: Viruses and Apoptosis (Chapter 6) Bacteriophages and Human Disease (Chapter 7) Learning objectives for each chapter Pronunciation section in Glossary and abbreviations section (Appendix 1) Key events in the history of virology (Appendix 3) Addition of colour in text and figures to enhance understanding of key points Also: Self assessment questions at the end of each chapter Classification of Subcellular Infectious agents Approx. 20% new material and completely revised throughout Over 120 figures

Foodborne Viral Pathogens

Viral transmission through contaminated food and water claims hundreds of thousands of lives every year, particularly affecting children in developing nations. Foodborne viral pathogens are associated with gastroenteritis and hepatitis, causing widespread epidemics that affect all populations and demographics worldwide. Foodborne Viral Pathogens comprehensively covers the predominant etiological viral agents of foodborne disease, including norovirus, hepatitis A virus, hepatitis E virus, astrovirus, sapovirus and rotavirus, and several emerging viruses and prions. By improving food safety awareness and viral detection, and through promotion of global food safety standards, our ability to cope with and control foodborne disease will be enhanced. Foodborne Viral Pathogens includes a detailed review of the molecular biology, potential vaccines, and available antiviral treatments of all major foodborne viral pathogens and prions. Written by specialists and leading virologists, this book features techniques used for typing, viral detection, strategies for control, and viral risk assessments. This book is intended as a detailed handbook for food microbiology and medical applications and will be a useful guide for anyone with an interest in foodborne disease.

Molecular Biology of Human Hepatitis Viruses

Molecular Virology of Human Pathogenic Viruses presents robust coverage of the key principles of molecular virology while emphasizing virus family structure and providing key context points for topical advances in the field. The book is organized in a logical manner to aid in

student discoverability and comprehension and is based on the author's more than 20 years of teaching experience. Each chapter will describe the viral life cycle covering the order of classification, virion and genome structure, viral proteins, life cycle, and the effect on host and an emphasis on virus-host interaction is conveyed throughout the text. Molecular Virology of Human Pathogenic Viruses provides essential information for students and professionals in virology, molecular biology, microbiology, infectious disease, and immunology and contains outstanding features such as study questions and recommended journal articles with perspectives at the end of each chapter to assist students with scientific inquiries and in reading primary literature. Presents viruses within their family structure Contains recommended journal articles with perspectives to put primary literature in context Includes integrated recommended reading references within each chapter Provides access to online ancillary package inclusive of annotated PowerPoint images, instructor's manual, study guide, and test bank

Principles of Molecular Virology (Standard Edition)

Explores the hidden world of viruses, explaining how they profoundly affect human lives and updating the reader in current virus-related issues, such as the frenetic evolution of the HIV virus, which could pose greater dangers in the future. By the author of Parasite Rex.

Current Issues in Molecular Virology

Hepatitis A and B viruses have infected nearly half the current world population; and as many as 500 million people are still infected with the hepatitis B or C virus today. Hepatitis B vaccination is effective but not universally adopted and no vaccine is available against hepatitis C. Treatment is prohibitively expensive for areas of high endemicity or prevalence and not universally effective. This important and timely book covers recent advances in understanding the molecular biology of hepatitis viruses. The advances have contributed new insights into the molecular mechanisms involved in replication of genetic information and in gene expression; and have translated into diagnostics; prevention and development of antiviral drugs. Contents: Hepatitis A Virus Hepatitis B Virus Hepatitis Delta Virus Hepatitis C Virus Hepatitis E Virus Other Hepatitis-Associated Viruses: HGV/GBC Readership: Graduate students; virologists (medical/non-medical) and molecular biologists. Keywords: Viral Hepatitis; Hepatitis A; Hepatitis B; Hepatitis C; Hepatitis D; Delta Virus; Non-A Non-B Hepatitis; Hepatocellular Carcinoma; Viral Carcinogenesis Reviews: □ It is a sound accompaniment to a focussed lecture; a bookshelf reference on this group of viruses in one volume; but moreover; a detailed introduction to the nucleic acid arrangements of these diverse pathogens. □ Australian Journal of Medical Science □ This book provides a good introduction and foundation for the study of this disparate group of viruses and the low price will make it readily accessible to students of microbiology; virology and medicine. □ Microbiology Today

Clinical Virology Manual

Rev. ed. of: How pathogenic viruses work / Lauren Sompayrac. c2002.

Principles of Virology, Volume 1

This is the second edition of a well received textbook which was originally published in 1993. The new edition includes major revisions in certain chapters, and integrates the interface between science and medicine more than it did previously. There is also more discussion on clinically important conditions. The bright, bold format, from the first edition has been kept, but has been given a more sophisticated and up-to-date look. Virology, perhaps more than any other discipline, plays an extremely important role in the advances of biomedical research. New discoveries are continually being made, and their subsequent application to the relief of suffering proceed at an ever-increasing pace. Virology is important not only in the study of infections and their treatment and prevention, but also in the unravelling of the most fundamental aspects of biology. This is because viruses have an intimate relationship with the basic machinery of their host cells. Thus, research on how viruses reproduce themselves and spread has given us many insights into the way in which the cells of our bodies function, leading in turn to a better understanding of the whole organism and of how infective diseases may be prevented or cured. The speed of advance in this area has increased the difficulties encountered by students and teachers in absorbing and imparting important information as effectively as possible. It is important that the students are provided with enough information not just to pass examinations but also to provide a foundation of knowledge adequate for subsequent professional practice. It is equally important that this information is presented in an attractive assimilated manner. In this book Leslie Collier and John Oxford present a delightfully written account of basic and clinical virology that meets both of these requirements. Richly illustrated with around 130 line drawings and photographs, Human virology provides a complete review of this rapidly expanding field of biology for medical, dental, and microbiology students. Leslie Collier is a freelance medical editor and writer and was formerly Professor of Virology at the Royal London Hospital. John Oxford is the current holder of this position. Reviews of the first edition 'Collier and Oxford are to be congratulated on producing a textbook for undergraduates which is refreshing in its ability to make the subject interesting and clinically relevant in a format that is both easy and enjoyable to read.' British Journal of Hospital Medicine 'excellent student text which combines scholarship with easy to remember diagrams and memory aides.' Aslib Book Guide 'The book is very well illustrated and the only adjective for the many electronmicrographs is "superb".' J Med Microbiol 'It is a pleasure to recommend Human Virology as a textbook for basic clinical virology.' International Antiviral News

Molecular and Cellular Biology of Viruses

This valuable new book describes the molecular biology and pathogenesis of certain viruses linked with human cancers. It provides an up-to-date account of the progress in our knowledge of the virus/host interactions which lead to cancer, as well as insights on the complexity of virus/host interactions in general, most of which have yet to be delineated. The volume also offers an historical perspective of cancer viruses as well as an examination of the geographical distribution and prevalence of cancers. Human Tumor Viruses is essential reading for researchers and graduate students in virology, cell biology, pathology, and oncology and for anyone engaged in cancer research.

Molecular Virology

This book is a collection of chapters dealing with examples of RNA and DNA viruses, and issues such as how these gene packages have learnt to take advantage of their hosts, molecular recognition events that hosts may use to counterattack the viruses, and how researchers have developed strategies to use viruses or their parts as tools for different purposes.

Coronaviruses

A springboard for developing new approaches to understanding, preventing, and treating picornaviral diseases. □ Examines the most current breakthroughs as well as the challenges that lie ahead in picornavirus research; encapsulates current knowledge of the molecular biology, evolution, and pathogenesis of this large family of viruses; and, examines the diseases that these viruses cause and the latest vaccines and antiviral drugs to prevent and control those diseases. □ Explores the structural and mechanistic bases of picornavirus replication, highlighting new insights about the host cell interactions needed for virus growth; and, illustrates how the regular occurrence of mutations, typical of viruses with RNA as genetic material, generates the quasispecies dynamics that underlie viral fitness. □ Focuses on picornaviruses that cause disease, examining pathogenicity and innate and acquired immune responses against infection as well as the latest vaccine and antiviral drug strategies.

Molecular Virology of Human Pathogenic Viruses

Viral Gastroenteritis: Molecular Epidemiology and Pathogenesis provides a comprehensive review of research on viruses causing acute gastroenteritis in infants and young children, including coverage of rotaviruses, human caliciviruses, astroviruses, enteric adenoviruses, and viruses causing gastroenteritis more rarely. Includes general chapters on gastrointestinal physiology and pathophysiology, gastrointestinal immune mechanisms, immunodeficiencies and host genetics influencing susceptibility to viral gastroenteritis, and therapeutic and preventative approaches. The book also includes special sections on virus particle structures, replication cycles, pathogenesis, immunology, epidemiology, and preventative measures. This book covers both basic science and translational applications and is an appropriate resource for virologists, molecular biologists, epidemiologists, gastroenterologists, vaccinologists, and those with an interest in public health. Features new approaches in diagnosis and characterization of viral gastroenteritis pathogens Includes coverage of therapeutic and preventative methods Covers recent advances in characterizing the molecular biology and immune responses of rotaviruses and noroviruses Covers both basic science and translational applications and is an appropriate resource for virologists, molecular biologists, epidemiologists, gastroenterologists, vaccinologists, and those with an interest in public health

Emerging and Reemerging Viral Pathogens

Neurovirology is an interdisciplinary field representing a melding of virology, clinical neuroscience, molecular pathogenesis, diagnostic virology, molecular biology, and immunology. Neuroviral Infections: RNA Viruses and Retroviruses presents an up-to-date overview of the

general principles of infections and major neuroviral infections caused by RNA viruses and retroviruses. It is designed for virologists, specialists in infectious diseases, teachers of virology, and postgraduate students of medicine, virology, neurosciences, and immunology.

Clinical Virology

The book gives a comprehensive overview on the knowledge of virus infection relevant for humans and animals. For each virus family the molecular details of the virus particle and the viral replication cycle are described. In the case of virus types with relevance for human and/or animal health the data on molecular biology, genetics and virus-cell interaction are combined with those concerning, pathogenesis, epidemiology, clinics, prevention and therapy.

Molecular Detection of Animal Viral Pathogens

" Molecular Virology of Human Pathogenic Viruses" presents robust coverage of the key principles of molecular virology while emphasizing virus family structure and providing key context points for topical advances in the field. The book is organized in a logical manner to aid in student discoverability and comprehension and is based on the author s more than 20 years of teaching experience. Each chapter will describe the viral life cycle covering the order of classification, virion and genome structure, viral proteins, life cycle, and the effect on host and an emphasis on virus-host interaction is conveyed throughout the text. " Molecular Virology of Human Pathogenic Viruses" provides essential information for students and professionals in virology, molecular biology, microbiology, infectious disease, and immunology and contains outstanding features such as study questions and recommended journal articles with perspectives at the end of each chapter to assist students with scientific inquiries and in reading primary literature. Presents viruses within their family structureContains recommended journal articles with perspectives to put primary literature in contextIncludes integrated recommended reading references within each chapterProvides access to online ancillary package inclusive of annotated PowerPoint images, instructor s manual, study guide, and test bank"

Henipavirus

Pathology and Pathogenesis of Human Viral Disease is a comprehensive reference that examines virus-induced clinical disease of humans in the context of the responsible virus and its epidemiology. Encompassing everything from cold and flu viruses to sexually transmitted diseases, this important resource describes the cellular and tissue pathological changes attributable to infection in the context of the pathogenic mechanisms involved. The author provides a comprehensive review of the older and contemporary literature, considering both the common and much rarer complications of infection. Pathology and Pathogenesis of Human Viral Disease is written from the unique perspective of the clinical pathologist. It will help clinicians and pathologists gain a better understanding of changes that occur in viral infected cells, tissues, and organs. It will also serve as a pathology source book for virologists, internists, and pediatricians. Key Features * Provides a

comprehensive, worldwide perspective of viral disease pathology * Bridges the fields of pathology and virology; integrating clinical disease with cell and tissue pathology * Addresses topics from the perspective of the clinical pathologist * Illustrates unique, viral induced pathological lesions * Considers common and uncommon complications of infection

The Molecular Basis of Viral Infection

The definitive clinical virology resource for physicians and clinical laboratory virologists The clinical virology field is rapidly evolving and, as a result, physicians and clinical laboratory virologists must have a reliable reference tool to aid in their ability to identify and diagnose viral infections to prevent future outbreaks. In this completely revised edition of the Clinical Virology Manual, Editor in Chief, Michael Loeffelholz, along with Section Editors, Richard Hodinka, Benjamin Pinsky, and Stephen Young, have compiled expert perspectives of a renowned team of clinical virology experts and divided these contributions into three sections to provide the latest information on the diagnosis of viral infections, including ebola, HIV and Human papillomavirus state of the art diagnostic technologies, including next-generation sequencing and nucleic acid amplification methods taxonomy of clinically important viruses such as polyomaviruses and zoonotic viruses This comprehensive reference also includes three appendices with vital information on reference virology laboratories at the Centers for Disease Control and Prevention, state and local public health laboratories, and international reference laboratories and laboratory systems. Additionally, a new section "Diagnostic Best Practices," which summarizes recommendations for diagnostic testing, and cites evidence-based guidelines, is included in each viral pathogens chapter. Clinical Virology Manual, Fifth Edition serves as a reference source to healthcare professionals and laboratorians in providing clinical and technical information regarding viral diseases and the diagnosis of viral infections.

Viruses

Fenner and White's Medical Virology, Fifth Edition provides an integrated view of related sciences, from cell biology, to medical epidemiology and human social behavior. The perspective represented by this book, that of medical virology as an infectious disease science, is meant to provide a starting point, an anchor, for those who must relate the subject to clinical practice, public health practice, scholarly research, and other endeavors. The book presents detailed exposition on the properties of viruses, how viruses replicate, and how viruses cause disease. These chapters are then followed by an overview of the principles of diagnosis, epidemiology, and how virus infections can be controlled. The first section concludes with a discussion on emergence and attempts to predict the next major public health challenges. These form a guide for delving into the specific diseases of interest to the reader as described in Part II. This lucid and concise, yet comprehensive, text is admirably suited to the needs of not only advanced students of science and medicine, but also postgraduate students, teachers, and research workers in all areas of virology. Features updated and expanded coverage of pathogenesis and immunity Contains the latest laboratory diagnostic methods Provides insights into clinical features of human viral disease, vaccines, chemotherapy, epidemiology, and control

Essential Human Virology

Viruses: Molecular Biology, Host Interactions, and Applications to Biotechnology provides an up-to-date introduction to human, animal and plant viruses within the context of recent advances in high-throughput sequencing that have demonstrated that viruses are vastly greater and more diverse than previously recognized. It covers discoveries such as the Mimivirus and its virophage which have stimulated new discussions on the definition of viruses, their place in the current view, and their inherent and derived "interactomics" as defined by the molecules and the processes by which virus gene products interact with themselves and their host's cellular gene products. Further, the book includes perspectives on basic aspects of virology, including the structure of viruses, the organization of their genomes, and basic strategies in replication and expression, emphasizing the diversity and versatility of viruses, how they cause disease and how their hosts react to such disease, and exploring developments in the field of host-microbe interactions in recent years. The book is likely to appeal, and be useful, to a wide audience that includes students, academics and researchers studying the molecular biology and applications of viruses. Provides key insights into recent technological advances, including high-throughput sequencing. Presents viruses not only as formidable foes, but also as entities that can be beneficial to their hosts and humankind that are helping to shape the tree of life. Features exposition on the diversity and versatility of viruses, how they cause disease, and an exploration of virus-host interactions.

Neuroviral Infections

Designed for students learning about viruses for the first time at the undergraduate or graduate level, Fundamentals of Molecular Virology is presented in a style which relates to today's students and professors. This book is also a valuable, up-to-date source of information for graduate students, postdoctoral fellows and research scientists working with viruses. Chapters contributed by prominent virologists were edited to conform to a clear and accessible style. The text provides a thorough presentation of basic and contemporary concepts in virology for a student's first exposure to the field.

Pathology and Pathogenesis of Human Viral Disease

Biosafety in Microbiological & Biomedical Labs. quickly became the cornerstone of biosafety practice & policy upon first pub. in 1984. The info. is advisory in nature even though legislation & reg'n., in some circumstances, have overtaken it & made compliance with the guidance mandatory. This rev. contains these add'l. chap.: Occupat'l. med. & immunization; Decontam. & sterilization; Lab. biosecurity & risk assess.; Biosafety Level 3 (Ag.) labs.; Agent summary state. for some ag. pathogens; & Biological toxins. Also, chapters on the principles & practices of biosafety & on risk assess. were expanded; all agent summary state. & append. were rev.; & efforts were made to harmonize recommend. with reg'ns. promulgated by other fed. agencies.

Virology

Virology is in a sense both one of the most important precursors and one of the most significant beneficiaries of structural and cellular molecular biology. Numerous breakthroughs in our understanding of the molecular interactions of viruses with host cells are ready for translation into medically important applications such as the prevention and treatment of viral infections. This book collects a wide variety of examples of frontline research into molecular aspects of viral infections from virological, immunological, cell- and molecular-biological, structural, and theoretical perspectives. Contributors are world leaders in their fields of study and represent prestigious academic and research institutions. Review articles vary vastly in scope: some focus on a narrowly defined scientific problem of one particular virus with careful introduction for the non-specialist; others are essays in general and comparative virology with forays into specific viral species or molecules. The different perspectives complement each other and collectively the contributions provide an impression of the fast-moving frontlines of virology while showing how the problems have evolved. Structural data are presented through high-quality illustrations.

A Planet of Viruses

Paperback. ISBN 978-1-912530-35-9. In this timely book, internationally renowned experts review literally every aspect of cutting edge coronavirus research providing the first coherent picture of the molecular and cellular biology since the outbreak of SARS in 2003. Essential reading for all coronavirologists as well as scientists working on other viruses of the respiratory and/or gastrointestinal tract.

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