

Human Seasonal Influenza Viruses

Types

• Influenza A

(Influenza virus types A&B cause most human illness and the flu season)

• Influenza B

Subtypes

• A(H1N1)

• A(H3N2)

Lineages

• B(Victoria)

• B(Yamagata)

Clades (Groups)

[Select Examples]

• 6B.1

• 3C.2a, 3C.3a

• V1A

• Y1, Y2, Y3

Sub-Clades (Sub-Groups)

[Select Examples]

• 6B.1A

• 3C.2a1; 3C.2a2; 3C.2a3;
3C.2a4

• V1A.1; V1A.2; V1A.3

• None

The Influenza Viruses

Quanjiao Chen, Yizhi Tao, Dayan Wang



The Influenza Viruses:

The Influenza Viruses and Influenza Edwin Dennis Kilbourne, 1975 **The Influenza Viruses** Leslie Hoyle, 1968

The Influenza Viruses Robert M. Krug, 2012-12-06 Influenza virus is an important human pathogen frequently causing widespread disease and a significant loss of life. Much has been learned about the structure of the virus, its genetic variation, its mode of gene expression and replication, and its interaction with the host immunologic system. This knowledge has the potential of leading to approaches for the control of influenza virus. In addition, research on influenza virus has led to important advances in eukaryotic molecular and cellular biology and in immunology. A major focus of this book is the molecular biology of influenza virus. The first chapter, which serves as an introduction, describes the structure of each of the genomic RNA segments and their encoded proteins. The second chapter discusses the molecular mechanisms involved in the expression and replication of the viral genome. In addition to other subjects, this chapter deals with one of the most distinctive features of influenza virus, namely the unique mechanism whereby viral messenger RNA synthesis is initiated by primers derived from newly synthesized host cell RNAs in the nucleus. Among the most significant accomplishments in influenza virus research has been the delineation of the three-dimensional structure of the two surface glycoproteins of the virus, the hemagglutinin and neuraminidase. This has provided a structural basis for mapping both the antigenic sites and the regions involved in the major biological functions of these two molecules. **Genetics of Influenza Viruses** P. Palese, D.W.

Kingsbury, 2012-12-06 With the advent of genetic engineering methods and improved biochemical techniques, much has been learned about the replication of influenza viruses, their structure, and their epidemiology. It appears that the time is ripe to review these efforts and to provide a molecular perspective of influenza virology. It is hoped that this book will stimulate our thinking, help us in designing new experiments, and possibly show avenues leading to the control of the diseases associated with influenza viruses. Peter Palese, New York, N.Y., August 1983. David W. Kingsbury, Memphis, Tenn. Contents: List of Contributors. XV. 1. The Evolution of Influenza Viral Genetics: A Perspective. By E. D. Kilbourne. 1. I. Introduction. 1. II. The Development of Modern Influenza Viral Genetics. 2. A. Early Evidence of Genetic Variation in the Laboratory. 2. B. Application of Formal Genetic Techniques to Studies of Influenza Virus. 3. C. Genetic Markers. 3. D. Development of Plaquing Systems. 4. E. The Use of Conditional Lethal Mutants. 5. F. New Approaches in Influenza Virus Genetics. 6. 1. The Biochemical Identification of Viral Gene Products in the Unambiguous Definition of Viral Inheritance. 6. 2. Mapping of the Influenza Virus Genome by Correlative Physicochemical and Biological Techniques. 7. 3. The Application of Molecular Biological Techniques to the Study of Viral Genetic Variation. 8. 4. Oligonucleotide Mapping of Viral RNAs. 8. 5. Contribution of Protein and RNA Sequencing to Influenza Viral Genetics. Intragenic Mapping. 8. III. Viral Genetics and the Understanding of Viral Virulence and Pathogenicity.

Influenza Viruses Michael F. Schmidt, 2007 This book includes most of the lectures held at the Berlin Influenza Conference, written by some of the leading virologists in the world. The articles are top class and up to date. Contents:

Scholtissek's 75th Birthday Aspects of Protein Structures of Borna Disease Virus The Looming Danger Avian influenza in wild birds The sialic acid binding activity of the porcine transmissible gastroenteritis coronavirus TGEV Stability of the HA Ectodomain Reverse Genetics with Influenza Viruses Rapid generation of influenza virus vaccines 100 years of influenza history Influenza Pandemic Preparedness Proteolytic cleavage of the influenzavirus haemagglutinin and other viral glycoproteins The risk for a world wide influenza pandemic is a national and international challenge Influenza viruses and MAP kinase cascades Novel targets for an antiviral intervention Lipid rafts in immune cell signalling and viral infection Receptor specificity host range and cellular tropism of influenza viruses Influenza virus budding the role of host and virus components Membrane accumulation and lipid raft association of influenza A virus haemagglutinin triggers signalling and nuclear export of the viral genome Glycosylation lessons from viruses and protozoa Dissecting the influenza virus genome Molecular biology of the pathogenesis of Sendai virus host range mutant F1 R Recent structural studies of influenza haemagglutinin A new approach of a live virus vaccine by modification of the cleavage site of the Influenza virus haemagglutinin by reverse genetics Cell entry of Influenza virus by membrane fusion The outbreak of H5N1 highly pathogenic avian Influenza in Asia and pandemic preparedness Influenza The role of migrating birds in past and future influenza pandemics **Insight into Influenza Viruses of Animals and Humans** Sanjay Kapoor, Kuldeep

Dhama, 2014-03-31 This book provides salient information on all aspects of influenza flu viruses affecting animals and humans It specifically reviews the properties and replication of influenza viruses their evolution and emergence epidemiology role of migratory birds in disease transmission clinical signs in humans animals and poultry pathogenesis and pathogenicity public health importance and potential threats diagnosis prevention and control measures and pandemic preparedness Influenza flu viruses evolve continuously and jump species causing epidemics as well as pandemics in both human and animals During the past 150 years various strains of influenza virus like the Spanish flu Asian flu Hong Kong flu bird flu and swine flu were responsible for high mortality in humans as well as birds High mutation rates antigenic shifts drifts reassortment phenomena and the development of antiviral drug resistance all contribute to ineffective chemotherapy and vaccines against influenza viruses Due to their devastating nature high zoonotic implications and high mortality in humans and poultry they have a severe impact on the socioeconomic status of countries Disease awareness rapid and accurate diagnosis surveillance strict biosecurity timely adoption of appropriate preventive and control measures and pandemic preparedness are crucial to help reduce virus transmission thus reducing clinical cases deaths and pandemic threats

Influenza viruses: Infection, pathogenesis, and host responses Quanjiao Chen, Yizhi Tao, Dayan Wang, 2023-04-27

Influenza Vaccines for the Future Rino Rappuoli, Giuseppe Del Giudice, 2010-10-28 The emergence of H5N1 avian influenza in 1997 and of the influenza A H1N1 of swine origin in 2009 calls for new rapid and sustainable solutions for both seasonal and pandemic influenza viruses During the last ten years science and technology have made enormous progress and

we are now able to monitor in real time the genetics of viruses while they spread globally to make more powerful vaccines using novel adjuvants and to generate viruses in the laboratory using reverse genetics This volume not only provides state of the art information on the biology of influenza viruses and on influenza vaccines but is also designed to be a resource to face the present H1N1 pandemic and to plan for long term global and sustainable solutions **Influenza Virus** Yohei

Yamauchi, Maria João Amorim, 2025-01-31 This fully updated volume presents protocols crucial for contemporary influenza virus research placing a special emphasis on the latest advancements in imaging technologies including super resolution microscopy cryo electron tomography cryo ET freeze replica electron microscopy and high speed atomic force microscopy AFM In addition to covering traditional methods like virus purification this edition introduces innovative approaches for visualizing molecular interactions between viral proteins and host proteins methods for developing physiological cell culture models and animal models as well as concepts concerning the prediction of viral evolution and the utilization of artificial intelligence in infection biology research Written for the highly successful Methods in Molecular Biology series chapters include introductions to their respective topics lists of the necessary materials and reagents step by step and readily reproducible laboratory protocols and tips on troubleshooting and avoiding known pitfalls Authoritative and up to date Influenza Virus Methods and Protocols Second Edition serves as an ideal guide for researchers looking to deepen our understanding of the intricate interplay between viruses and host cells **Influenza Virus: The Inevitable Enemy** Fu

Gao, Huan Liu, 2023-09-13 This book will guide readers through the history of the flu In ten chapters it explains Influenza in a simple way Influenza always seems to have endless topics The flu virus seemingly tiny has brought on one disaster after another to human beings 2018 is the 100th anniversary of the outbreak of the 1918 Flu that swept the world The flu a century ago claimed nearly one twentieth of human life on the planet It became the most deadly flu in human history This book introduces the past and present life of the influenza virus in a light hearted way leading the reader to review the past from the history of the flu the development of the flu human immunity and health impacts on society and the country Through touching stories illustrations and diagrams it tells the great discoveries and related advances in science and technology introduces medical knowledge related to influenza and reviews the medical effectiveness in preventing influenza thus displaying the ongoing battle between humans and the flu virus Looking back at the development of science and technology humans have relentlessly sought the prevention and control of this infectious disease constantly guarding the path of life and health which gradually becomes a quiet past but only to awaken again and again

Embracing the Tune of Appearance: An Psychological Symphony within **The Influenza Viruses**

In some sort of consumed by displays and the ceaseless chatter of instantaneous interaction, the melodic elegance and psychological symphony created by the prepared term frequently diminish into the back ground, eclipsed by the persistent noise and distractions that permeate our lives. Nevertheless, located within the pages of **The Influenza Viruses** a stunning literary prize overflowing with raw feelings, lies an immersive symphony waiting to be embraced. Constructed by an outstanding musician of language, that fascinating masterpiece conducts viewers on a psychological journey, skillfully unraveling the hidden tunes and profound influence resonating within each cautiously crafted phrase. Within the depths of this touching review, we can explore the book is central harmonies, analyze its enthralling writing model, and surrender ourselves to the profound resonance that echoes in the depths of readers souls.

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