

Avian Virology

Current Research and Future Trends

Avian Virology

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The rapid growth of the global human population has led to an urgent need for affordable safe food. Since poultry meat can help satisfy this need the global poultry industry has experienced significant growth in recent years. Pathogenic avian viruses represent a major threat to the industry. Although a large number of viruses infect poultry, some avian viruses cause inapparent infections while others cause severe diseases with economically devastating consequences. In addition some avian viruses are zoonotic thus capable of infecting humans. For example, the highly pathogenic avian influenza virus subtype H5N1 can infect humans, often having fatal outcomes.

This comprehensive book provides a timely update on all of the most important avian viruses: avian influenza virus, infectious bronchitis virus, Newcastle disease virus, infectious bursal disease virus, chicken anemia virus, infectious laryngotracheitis virus, avian adenovirus, Marek's disease virus, avian reovirus, avian pox virus, avian leukosis virus, avian metapneumovirus, and avian paramyxoviruses. The chapters are written by internationally recognized experts from all over the world who have made seminal contributions to their respective field of avian virus research. Each chapter covers the current knowledge on the history, genome organization, viral proteins, genetics, epizootiology, pathogenesis, immunity, diagnosis, prevention and control, and future challenges of these viruses. The book closes with a fascinating chapter that reviews the recent advances on avian immune responses to virus infection.

This book is an invaluable reference source of timely information for students, virologists, immunologists, veterinarians, and scientists working on avian diseases. It is also highly recommended for all veterinary school and university libraries.

Chapter 1. Avian Influenza Virus (*Daniel R. Perez, Silvia Carnaccini, Stivalis Cardenas-Garcia, Lucas M. Ferreri, Jefferson Santos and Daniela S. Rajao*)

Chapter 2. Newcastle Disease Virus (*Siba K. Samal*)

Chapter 3. Avian Paramyxoviruses Other Than Newcastle Disease Virus (*Anandan Paldurai and Siba K. Samal*)

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Chapter 6. Avian Reovirus (*Frederick S.B. Kibenge, Yingwei Wang, Molly J.T. Kibenge, Anil Kalupahana and Scott McBurney*)

Chapter 7. Infectious Bursal Disease Virus (*Shijun J. Zheng*)

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Chapter 9. Chicken Infectious Anaemia Virus (*Karel A. Schat*)

Chapter 10. Avian Adenoviruses (*Eva Nagy*)

Chapter 11. Infectious Laryngotracheitis Virus (*Mauricio J. C. Coppo, Amir H. Noormohammadi and Joanne M. Devlin*)

Chapter 12. Marek's Disease Virus (*Blanca M. Lupiani, Yifei Liao, Di Jin, Yoshihiro Izumiya and Sanjay M. Reddy*)

Chapter 13. Avian Pox Viruses (*Deoki N. Tripathy*)

Chapter 14. Avian Immune Responses to Virus Infection (*Lonneke Vervelde and Jim Kaufman*)

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