

Porcine Viruses

From Pathogenesis to Strategies for Control

Porcine
Viruses

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The global population has quadrupled over the last century leading to an increased demand for affordable safe food. Satisfying this demand will not be easy and will require even more widespread use of intensive farming practices. However intensive farming practices can lead to higher probabilities of outbreaks of a variety of viral diseases, a critical concern in terms of food protection and food security. In the case of the pig industry there are several important viruses. One example is African swine fever virus (ASFV) which causes a devastating disease with enormous socio-economic consequences in affected countries, mostly in Africa. No ASFV vaccine currently exists. An understanding of the molecular biology, pathogenesis, host-virus interaction and epidemiology of these viruses is critical for their prevention and control.

This book provides a comprehensive review of the current knowledge of the most important porcine viruses written by prominent scientists who have made great contributions in their respective fields of expertise. Topics include: African swine fever virus, classical swine fever virus, foot-and-mouth disease virus, porcine circovirus, porcine epidemic diarrhea virus, porcine parvovirus, porcine reproductive and respiratory syndrome virus, and swine vesicular disease virus. Each chapter covers the current knowledge on epidemiology, pathogenesis, virus biology, diagnosis, and prevention and control strategies.

This book is essential reading for everyone working with porcine viruses from the PhD student to the experienced scientist, in academia, the pharmaceutical or biotechnology industries and for those working in clinical environments.

Chapter 1. African Swine Fever Virus (*E. Arabyan, A. Kotsinyan, A. Hakobyan and Hovakim Zakaryan*)

Chapter 2. Classical Swine Fever Virus (*Sandra Blome*)

Chapter 3. Foot-and-Mouth Disease Virus (*Francisco Sobrino, F. Caridi, R. Cañas-Arranz and M. Rodríguez-Pulido*)

Chapter 4. Porcine Circoviruses (*Sheela Ramamoorthy and P. Pineyro*)

Chapter 5. Porcine Epidemic Diarrhea Virus (*Changhee Lee*)

Chapter 6. Porcine Parvovirus (*A.F. Streck and Uwe Truyen*)

Chapter 7. Porcine Reproductive and Respiratory Syndrome Virus (*Alexander N. Zakhartchouk, S. K. Pujhari and J.C.S. Harding*)

Chapter 8. Swine Vesicular Disease Virus (*E. Escribano-Romero, M.A. Martín-Acebes, A. Vazquez-Calvo, E. Brocchi, G. Pezzoni, Francisco Sobrino and B. Borrego*)

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