

Advances in Virus Research Volume 68

Bryony C. Bonning

Dr. Bonning was trained in entomology and virology in England and the United States. Her current research at Iowa State University deals with development of novel approaches for management of insect pests, in particular the genetic optimization of insect viruses for use as insecticides with a focus on baculoviruses and dicistroviruses.

Baculoviruses are perhaps unique among viruses in the breadth of their biotechnological applications. These insect-specific viruses are used not only for insect pest management purposes, but also as laboratory research tools for production of recombinant proteins and for protein display, and as potential vectors for human gene therapy. Although the biotechnological use of insect viruses has historically been dominated by the baculoviruses, the development of technologies from other insect virus families such as the Polydnaviridae, and Tetraviridae, is gaining in momentum.

Written by experts in the field, **Insect Viruses: Biotechnological Applications** provides a comprehensive review of the biotechnological applications of baculoviruses and other insect viruses. The book is divided into three sections: Insect Viruses as Laboratory Research Tools, Applications to Human and Animal Health, and Insect Pest Management. These chapters highlight the remarkable versatility of insect viruses for a diverse range of biotechnological applications and discuss recent advances.

This volume will serve as an invaluable reference for researchers and postgraduates within academia and industry working in virology, entomology, biotechnology, insect pest management and biological control, human gene therapy, vaccine development, drug discovery, and genetics.

Key Features

- Unique and timely coverage of a wide variety of biotechnological applications of insect viruses
- Discusses the latest advances including the use of less well-known insect virus families such as the Polydnaviridae and Tetraviridae
- Includes chapters on the use of baculoviruses for producing vaccines, drug screening and human gene therapy

Advances in Virus Research, published since 1953 by Academic Press, an imprint of Elsevier, is one of the most widely read and authoritative review sources in virology. This thematic volume on **Insect Viruses: Biotechnological Applications** continues in the tradition of the series.

Cover image: Transmission electron micrograph of budded viruses of *Autographa californica* multiple nucleopolyhedrovirus (AcMNPV) beneath the basement membrane overlying the gut of a *Heliothis virescens* larva (see chapter 12 for related information). Taken by Hailin Tang, Iowa State University. Inset: Schematic diagram of the budded virus phenotype of AcMNPV, by Mattea Wayne, Iowa State University.



ACADEMIC PRESS

An imprint of Elsevier
books.elsevier.com

ISBN-13: 978-0-12-039868-3
ISBN-10: 0-12-039868-0

