

VIRUSES

Molecular Biology, Host Interactions, and Applications to Biotechnology

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Viruses: Molecular Biology, Host Interactions, and Applications to Biotechnology provides an up-to-date introduction to viruses within the context of recent developments in genomic and metagenomic analyses.

This book presents viruses as formidable foes, but also examines the broader aspects of their influence on our lives, with special focus on the ways viruses are used in clinical and agricultural systems, and their often-overlooked biological and ecological roles. It explores fundamental aspects of virology, such as the structure of viruses, the organization of their genomes, and strategies in replication and expression – emphasizing the diversity and versatility of viruses, how they cause disease and how their hosts react to such disease. This 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.

Key Features

- Covers the diversity of viruses and the types of virus-host interactions, including how viruses cause disease.
- Presents viruses as entities that can be beneficial to their hosts and as drivers of evolution.
- Provides insights into viruses as vehicles of therapeutic agents, either as delivery vehicles for heterologous genetic material (gene therapy) or as agents with inherent cytotoxic activity (oncolytic virus therapy).
- Illustrates the relevance viruses as materials have in nanotechnology, the development of vectors and antiviral strategies based on transgenesis and CRISPR-Cas systems.



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