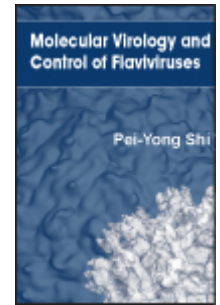


Molecular Virology and Control of Flaviviruses



Edited by: **Pei-Yong Shi**

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Flaviviruses are a diverse group of small RNA enveloped viruses, many of which are important human and animal pathogens. The best known include dengue virus, yellow fever virus, Japanese encephalitis virus, and West Nile virus. These viruses are endemic in many tropical and sub-tropical regions of the world. Dengue virus alone infects over 100 million people annually. In recent years, research on flaviviruses has progressed at a remarkable rate, leading to significant advances in our understanding of virus biology; this should ultimately lead to the development of better vaccine and antiviral strategies.

The editor of *Molecular Virology and Control of Flaviviruses* has assembled an up-to-date and cutting-edge anthology from the leading experts in the flavivirus field. Chapters are balanced by contributions from established investigators, who have dedicated their careers to flavivirus research, with those from newcomers who have recently made significant contributions to the flavivirus field. The book opens with a brief introduction then divides into two sections: Molecular Virology (Chapters 2-9) and Virus Prevention (Chapters 10-15). The first section covers: virion structure; virus replication; the NS1 glycoprotein; the NS3 protein; the NS5 protein; innate immunity and flavivirus infection; host responses to flavivirus infection; and flavivirus fitness and transmission. The second section includes: vaccines; antibody therapy; small molecule antiviral development; flavivirus diagnostics; vector-virus interactions; and vector control. The book represents an important update of flavivirus research and will serve as a reference to flavivirus researchers at the graduate level and beyond. A recommended text for all virology libraries.

Chapter 1. Flaviviruses: Past, Present And Future. *Duane J Gubler*

Chapter 2. Flavivirus Virion Structure. *Richard J. Kuhn*

Chapter 3. Flavivirus Replication and Assembly. *Justin A. Roby, Anneke Funk, and Alexander A. Khromykh*

Chapter 4. The Many Faces of the Flavivirus Non-structural Glycoprotein NS1. *David Muller and Paul R Young*

Chapter 5. The Flavivirus NS3 Protein: Structure and Functions. *Dahai Luoa, Siew Pheng Lim and Julien Lescar*

Chapter 6. Structure and Function of the Flavivirus NS5 Protein. *Julien Lescar, Siew Pheng Lim and Pei-Yong Shi*

Chapter 7. Innate Immunity and Flavivirus Infection. *Maudry Laurent-Rolle, Juliet Morrison and Adolfo García-Sastre*

Chapter 8. Host Responses During Mild and Severe Dengue. *Mark Schreiber, Joel Leong, and Martin Hibberd*

Chapter 9. Flavivirus Fitness and Transmission. *Gregory D. Ebel and Laura D. Kramer*

Chapter 10. Flavivirus Vaccines. *Scott B. Halstead*

Chapter 11. Antibody Therapeutics Against Flaviviruses. *Michael S. Diamond, Theodore C. Pierson, and John T. Roehrig*

Chapter 12. Flavivirus Antiviral Development. *Qing-Yin Wang, Yen-Liang Chen, Siew Pheng Lim, and Pei-Yong Shi*

Chapter 13. Flavivirus Diagnostics. *Elizabeth Hunsperger*

Chapter 14. Flavivirus-Vector Interactions. *Ken E. Olson and Carol D. Blair*

Chapter 15. Vectors of Flaviviruses and Strategies for Control. *Lee-Ching Ng and Indra Vythilingam*

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