

CONTENTS

1. The History and Evolution of Human Dengue Emergence	1
Nikos Vasilakis and Scott C. Weaver	
I. Introduction to Flaviviruses	2
II. Dengue Viruses	5
III. Dengue Epidemiology	8
IV. Evolution	29
V. Potential for Sylvatic Dengue Reemergence	42
Acknowledgments	55
References	55
2. Third-Generation Flavivirus Vaccines Based on Single-Cycle, Encapsidation-Defective Viruses	77
Douglas G. Widman, Ilya Frolov, and Peter W. Mason	
I. Introduction	78
II. Currently Licensed Vaccines for Flavivirus Diseases	83
III. Promising Vaccine Candidates in Development	88
IV. Replication-Defective and Single-Cycle Virus Vaccines	104
V. Conclusion and Perspectives	112
Acknowledgments	112
References	113
3. Swine Influenza Viruses: A North American Perspective	127
Amy L. Vincent, Wenjun Ma, Kelly M. Lager, Bruce H. Janke, and Jürgen A. Richt	
I. Introduction to Influenza A Viruses	128
II. Evolution of North American SI Viruses of the H1 and H3 Subtype	132
III. Cross-Species Transmission of Influenza Viruses and Novel Subtypes in North American Swine	136
IV. Vaccination of Pigs Against SI	139
V. Conclusions and Outlook	147
Acknowledgments	148
References	148

4. Replication and Partitioning of Papillomavirus Genomes	155
Alison A. McBride	
I. Background	156
II. Replication Initiation	161
III. Maintenance Replication	172
IV. Vegetative Replication	184
V. Other Aspects of Papillomavirus Replication	186
Acknowledgments	190
References	190
5. Rhesus Cytomegalovirus: A Nonhuman Primate Model for The Study of Human Cytomegalovirus	207
Yujuan Yue and Peter A. Barry	
I. Introduction	208
II. Background	209
III. Discovery of RhCMV	210
IV. Epidemiology of RhCMV	211
V. Pathogenesis of RhCMV	212
VI. The Coding Capacity of RhCMV	213
VII. Susceptibility of RhCMV to Anti-HCMV Drugs	214
VIII. Host Immunity to RhCMV	215
IX. Modulation of the Host by RhCMV	216
X. Vaccine Studies in Rhesus Macaques	218
XI. Future Directions	220
Acknowledgements	221
References	221
6. Drosophila Viruses and the Study of Antiviral Host-Defense	227
Tünde Huszar and Jean-Luc Imler	
I. Introduction	228
II. Sigma Virus	229
III. Drosophila C Virus (DCV)	236
IV. Other Drosophila Viruses	240
V. Antiviral Reactions in Drosophila	249
VI. Conclusion and Perspectives	256
Acknowledgments	258
References	258
<i>Index</i>	267
<i>Color plate section at the end of the book</i>	