

Contents

List of Contributors	ix
Chapter 1 Human Rhinovirus Cell Entry and Uncoating <i>Renate Fuchs and Dieter Blaas</i>	1
Chapter 2 Role of Lipid Microdomains in Influenza Virus Multiplication <i>Makoto Takeda</i>	43
Chapter 3 Functions of Integrin $\alpha 2\beta 1$, A Collagen Receptor, in the Internalization of Echovirus 1 <i>Varpu Marjomäki, Mikko Huhtala, Mikko Karjalainen, Timo Hyypiä and Jyrki Heino</i>	63
Chapter 4 Entry Mechanism of Murine and SARS Coronaviruses — Similarity and Dissimilarity <i>Fumihiro Taguchi</i>	77
Chapter 5 Hepatitis Viruses, Signaling Events and Modulation of the Innate Host Response <i>Syed Mohammad Moin, Anindita Kar-Roy and Shahid Jameel</i>	91
Chapter 6 Virus-Cell Interaction of HCV <i>Hideki Tani, Yasumasa Komoda, Chang-kwang Limn, Kensuke Suzuki, Kohji Moriishi, Tatsuo Miyamura and Yoshiharu Matsuura</i>	125

Chapter 7	RNA Replication of Hepatitis C Virus <i>Hideki Aizaki and Tetsuro Suzuki</i>	151
Chapter 8	Structure and Dynamics in Viral RNA Packaging <i>Thorsten Dieckmann and Marta Zumwalt</i>	173
Chapter 9	Rational Design of Viral Protein Structures with Predetermined Immunological Properties <i>James Lara and Yury Khudyakov</i>	199
Chapter 10	Bioinformatics Resources for the Study of Viruses at the Virginia Bioinformatics Institute <i>Anjan Purkayastha, Oswald Crasta, J. Dana Eckart, Michael Czar, X. J. Meng, Joao Setubal and Bruno Sobral</i>	267
Chapter 11	Virus Architecture Probed by Atomic Force Microscopy <i>A. J. Malkin, Yu. G. Kuznetsov, M. Plomp and A. McPherson</i>	289
Chapter 12	Filovirus Assembly and Budding <i>Takeshi Noda and Yoshihiro Kawaoka</i>	311
Chapter 13	Challenges in Designing HIV Env Immunogens for Developing a Vaccine <i>Indresh K. Srivastava and R. Holland Cheng</i>	327
Chapter 14	Insights into the <i>Caliciviridae</i> Family <i>Grant Hansman</i>	381
Chapter 15	Mathematical Approaches for Stoichiometric Quantification in Studies of Viral Assembly and DNA Packaging <i>Peixuan Guo, Jeremy Hall and Tae Jin Lee</i>	401

Chapter 16	Virus-like Particles of Fish Nodavirus <i>Chan-Shing Lin</i>	449
Chapter 17	The Assembly of the Double-Layered Capsids of Phytoreoviruses <i>Toshihiro Omura, Naoyuki Miyazaki, Hisashi Naitow, R. Holland Cheng, Tomitake Tsukihara and Atsushi Nakagawa</i>	463
Chapter 18	Structure and Assembly of Human Herpesviruses: New Insights From Cryo-Electron Microscopy and Tomography <i>Z. Hong Zhou and Pierrette Lo</i>	483
Chapter 19	Human Papillomavirus Type 16 Capsid Proteins: Immunogenicity and Possible Use as Prophylactic Vaccine Antigens <i>Tadahito Kanda, Kei Kawana and Hiroyuki Yoshikawa</i>	517
Chapter 20	Chimeric Recombinant Hepatitis E Virus-like Particles Presenting Foreign Epitopes as a Novel Vector of Vaccine by Oral Administration <i>Yasuhiro Yasutomi</i>	539
Chapter 21	Nucleocapsid Protein of Hantaviruses (<i>Bunyaviridae</i>): Structure and Functions <i>Alexander Plyusnin, Vibhor Kumar, Olli Vapalahti and Peter Engelhardt</i>	553
Chapter 22	Astrovirus Replication: An Overview <i>Susana Guix, Albert Bosch and Rosa M. Pintó</i>	571

Chapter 23	DNA Vaccines against Viruses <i>Britta Wahren and Margaret Liu</i>	597
Chapter 24	Life Cycles of Polyomaviridae — DNA Tumor Virus <i>Masaaki Kawano, Hiroshi Handa and R. Holland Cheng</i>	609
Index		631