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Titolo	Viral Fitness and Evolution : Population Dynamics and Adaptive Mechanisms // Esteban Domingo [and three others], editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2023] ©2023
ISBN	3-031-15640-4
Edizione	[First edition.]
Descrizione fisica	1 online resource (X, 344 p. 80 illus., 74 illus. in color.)
Collana	Current Topics in Microbiology and Immunology Series ; ; Volume 439
Disciplina	636.089
Soggetti	Animals - Diseases Plant viruses Virus diseases Virus diseases of plants Viruses - Variation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Theoretical analysis of the evolution of viral populations in sequence space, and empirical fitness landscapes -- Self-organized maps to derive fitness landscapes from deep sequencing data -- Mutations to overcome viral resistance in plants -- The role of recombination in the generation of new begomovirus phenotypes -- Plant virus adaptation to new hosts -- Viral fitness, host interactions, and resistance to antiviral agents -- Viral fitness and evolution of hepatitis C virus -- Population dynamics and fitness variations of hemorrhagic RNA viruses -- Coronavirus genome sequences, variation, and disease implications -- Epilogue: viral populations from a theoretical and experimental perspective.
Sommario/riassunto	This book unifies general concepts of plant and animal virus evolution and covers a broad range of topics related to theoretical and experimental aspects of virus population dynamics and viral fitness. Timely topics such as viral mechanisms to cope with antiviral agents, the adaptability of the virus to new hosts, emergence of new viral phenotypes, and the connections between short- and long-term virus evolution are included. By comparing plant and animal viruses,

universal mechanisms responsible for fitness variations, viral emergence and disease mechanisms are explored. Although emphasis is put on specific plant and human viral pathogens, relevant similarities and differences to other viruses are highlighted. Additionally, readers will learn more about the adaptability of coronaviruses, including the recently emerged SARS-CoV-2, the causative agent of the COVID-19 pandemic. The book is aimed at students and scientists interested in basic and applied aspects of plant and animal virus population dynamics and evolution.

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