1. Record Nr. UNINA9910437624003321

Titolo	Systems Biology [[electronic resource] /] / edited by Michael G. Katze
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2013
ISBN	1-283-94596-7 3-642-33099-1
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (276 p.)
Collana	Current Topics in Microbiology and Immunology, , 0070-217X ; ; 363
Disciplina	570.1 570.113
Soggetti	Medicine Medical microbiology Immunology Vaccines Biomedicine, general Medical Microbiology Vaccine
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Responsible series editor : Hilary Koprowski."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Editorial -- System approaches to dissecting Immunity -- Integrative omics and modeling of pathogenic Samonellae and Yersiniae -- The role and contribution of system biology to the non-human primate model of influenza pathogenesis and vaccinology -- Host-pathogen genome politics and policies -- The TB regulatory network.- Proteomic network understanding of immune cell signaling and cell-cell communication via data-driven modeling.- Systems vaccinology.- Correlates of vaccine and natural mediated immune protection in HIV infection -- System biology approach for new target and biomarker identification -- Subject index. .
Sommario/riassunto	In this volume, a wide-ranging series of reviews reveal how systems biology—a holistic and inter-disciplinary approach requiring the combined talents of biologists, mathematicians, and computer scientists—is changing the face of infectious disease research. Leading experts discuss how the use of high-throughput and computational

approaches are generating exciting—and often unexpected—new insights into the microbial-host interactions of a variety of bacterial and viral pathogens, including Salmonella, Yersinia, Mycobacterium, influenza virus, human and simian immunodeficiency virus, and hepatitis C virus. Additional chapters focus on systems approaches to innate immunity, intra- and inter-cellular signaling, biomarker discovery, and the evaluation and rational development of improved vaccines. Systems biology has both been hailed as a paradigm shift that will revolutionize biological science and criticized as overly expensive and complex. While the truth no doubt lies somewhere in between, the approach is yielding increasingly detailed and comprehensive views of biological systems and processes, including those that dictate the host response to infection and disease outcome. Systems Biology of Infectious Disease is highly informative reading for investigators already engaged in systems biology research as well as for those scientists and clinicians who may be seeking an introduction to the field.