

RNA VIRUSES

Host Gene Responses to Infections

This is the first comprehensive book on human/animal gene responses to RNA viral infections, including prevalent, emerging and re-emerging RNA viruses such as HIV, SARS-CoV, West Nile virus, influenza virus and many others. Human gene responses are reviewed by leading virologists worldwide in the following aspects: (i) the altered gene expression profiles at the transcriptional and translational levels detected with cutting-edge technologies such as cDNA microarray and proteomics; (ii) host innate and adapted immune responses to viral replication in target organs; (iii) virus-activated signal transduction pathways in cell survival, apoptosis and autophagosomal pathways; and (iv) the small interfering RNA/microRNA-mediated gene silencing pathway, a recently characterized new host defense mechanism against viral infection.

Organized into 27 highly accessible and well-illustrated chapters, this volume explores state-of-the-art knowledge of the molecular mechanisms of RNA virus infection and host-virus interactions. This comprehensive compilation of the altered gene expression profiles and signal transduction pathways in host cells in response to the majority of human/animal RNA viruses opens new directions for basic and clinical research on viral pathogenesis, and also provides valuable biomarkers for researchers to select gene targets in the development of diagnostic tests and antiviral therapeutics for a number of infectious diseases.

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