
Preface

Fire and Mello discovered that introducing long double-stranded RNA into the nematode *Caenorhabditis elegans* led to the targeted degradation of homologous mRNA. That revealed the existence of a fundamental mechanism for gene expression regulation, now known as RNA interference (RNAi) (Fire *et al.*, *Nature* 1998). This discovery has given rise to the advent of novel tools for biological research and drug discovery. RNA interference is emerging as a powerful modality for battling some of the most notoriously challenging viral clinical targets (hepatitis C virus, human immunodeficiency virus, and other human viruses). However, several critical issues associated with this novel technology must be resolved before it can progress to testing in human clinical trials. The two central topics of this book are the latest findings on RNAi-virus interactions and progress in the development of RNA

interference-based antiviral therapeutics. Some chapters emphasize general concepts concerned with the role of RNA interference in natural antiviral defence mechanisms; others suggest how to improve the efficacy and safety of RNA interference-based antiviral drugs; still others describe how this technology has been used as a new therapeutic tool for fighting specific viruses, including human immunodeficiency virus, hepatic viruses, or respiratory viruses. The book provides an in-depth review of RNA interference and viruses and discusses potential new avenues for research. I thank all the authors, who have contributed their time and expertise to produce a book that should provide stimulus for further research. I would like also to acknowledge Horizon Scientific Press for inviting me to serve as guest editor for this book.

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