

RNA Technologies

Volker A. Erdmann
Jan Barciszewski
Editors

RNA Technologies and Their Applications

 Springer

Contents

The Key Features of RNA Silencing	1
Kuniaki Saito, Keita Miyoshi, Mikiko C. Siomi, and Haruhiko Siomi	
Selected Strategies for the Delivery of siRNA <i>In Vitro</i> and <i>In Vivo</i>	29
Sandra D. Laufer, Anke Detzer, Georg Sczakiel, and Tobias Restle	
RNAi Suppression and Its Application	59
Xiaoping Yi and Rui Lu	
Strategies to Prevent siRNA-Triggered Cellular Toxicity	93
Matthias Bauer	
RNAi in Malignant Brain Tumors: Relevance to Molecular and Translational Research	107
Mitsutoshi Nakada, Daisuke Kita, Yutaka Hayashi, Kazuyuki Kawakami, Jun-ichiro Hamada, and Toshinari Minamoto	
Silencing Huntington's Disease Gene with RNAi	131
Yu Zhang and Robert M. Friedlander	
Application of Dicer-Substrate siRNA in Pain Research	161
Philippe Sarret, Louis Doré-Savard, Pascal Tétreault, Valérie Bégin-Lavallée, and Nicolas Beaudet	
RNAi Treatment of HIV-1 Infection	191
Karin J. von Eije and Ben Berkhout	

Application of RNA Interference to Treat Conditions Associated with Dysregulation of Transient Receptor Potential Vanilloid 1 Channel	209
Vickram Ramkumar, Debashree Mukherjea, Sarvesh Jajoo, Tejbeer Kaur, and Leonard P. Rybak	
Harnessing RNAi-Based Functional Genomics to Unravel the Molecular Complexity Underlying Skin Pigment Variation	227
Hsiang Ho, Jayavani Aruri, Safoora Ahmed, and Anand K. Ganesan	
mRNA Structure and its Effects on Posttranscriptional Gene Silencing	255
Stephen I. Rudnick, Veenu Aishwarya, and Alan M. Gewirtz	
Antisense RNA-Mediated Regulation of the p53 Tumor Suppressor	277
Marianne Farnebo and Klas G. Wiman	
Antisense Oligonucleotides: Insights from Preclinical Studies and Clinical Trials	285
Doreen Kunze, Kai Kraemer, and Susanne Fuessel	
What can the New Hammerhead Ribozyme Structures Teach us About Design?	305
William G. Scott	
microRNA Biogenesis and its Impact on RNA Interference	325
Stefanie Grund and Sven Diederichs	
MicroRNAs in Epithelial Antimicrobial Immunity	355
Jun Liu, Guoku Hu, Rui Zhou, Kristen M. Drescher, and Xian-Ming Chen	
Emerging Roles of Long Noncoding RNAs in Gene Expression and Intracellular Organization	369
Tetsuro Hirose	
Noncoding RNAs as Therapeutic Targets	393
Maciej Szymański and Jan Barciszewski	
Noncoding RNAs at <i>H19/IGF2</i> Locus: Role in Imprinting, Gene Expression, and Associated Pathologies	419
Nahalie Berteaux, Nathalie Spruyt, and Eric Adriaenssens	
Index	445