

Contents

Preface		vii
Chapter I	Transgene Silencing in Plants: Mechanisms, Applications and New Perspectives <i>Chiara Pagliarani, Irene Perrone, Andrea Carra and Giorgio Gambino</i>	1
Chapter II	RNA Silencing in the Ectomycorrhizal Fungus <i>Laccaria bicolor</i> <i>Minna J. Kemppainen and Alejandro G. Pardo</i>	43
Chapter III	Gene Silencing as a Promising Strategy to Target CNS and Neurological Disorders <i>Ana L. Cardoso, Sara M. Trabulo, Sónia P. Duarte, Pedro M. Costa, Luís P. Almeida and Maria C. Pedroso de Lima</i>	81
Chapter IV	Polymeric Nanoparticles as Efficient siRNA Delivery Systems <i>Surendra Nimesh, Nidhi Gupta, Ramesh Chandra</i>	111
Chapter V	Application of Negatively Charged Hydroxyproline-based DNA Mimics for Gene Silencing <i>Vladimir A. Efimov and Oksana G. Chakhmakhcheva</i>	139
Chapter VI	Gene Silencing and the Analysis of Immune Response in Model Insects <i>Davide Malagoli and Mauro Mandrioli</i>	167
Chapter VII	RNAi in Plants: Recent Developments and Applications in Agriculture <i>Muthappa Senthil-Kumar and Kirankumar S Mysore</i>	183
Chapter VIII	Silencing of Galectin-3 by Promoter Methylation during Prostate Cancer Progression: A Novel Transcriptional Regulation of Galectin-3 Expression <i>Hafiz Ahmed</i>	201

Chapter IX	Silencing Hepatitis B Virus Replication with Antiviral Pri-Mir Shuttles Generated from Liver-Specific Pol II Promoters <i>Abdullah Ely and Patrick Arbuthnot</i>	219
Chapter X	Effective Methods for Selecting siRNA Sequences by Using the Average Silencing Probability and a Hidden Markov Model <i>Shigeru Takasaki</i>	233
Chapter XI	Small RNA-mediated Gene Silencing for Plant Biotechnology <i>Ulku Baykal and Zhanyuan Zhang</i>	255
Chapter XII	Post Transcriptional Gene Silencing Methods for Functional Characterization of Abiotic Stress Responsive Genes in Plants <i>Muthappa Senthil-Kumar and Makarla Udayakumar</i>	271
Chapter XIII	Genome-wide Identification and Analysis of miRNAs Complementary to Upstream Sequences of mRNA Transcription Start Sites <i>Kenta Narikawa, Kenji Nishi, Yuki Naito, Minami Mazda and Kumiko Ui-Tei</i>	287
Chapter XIV	Gene Silencing: Theory, Techniques and Applications <i>Prashant Mohanpuria, Vinay Kumar, Monika Mahajan, Hasan Mohammad and Sudesh Kumar Yadav</i>	321
Chapter XV	RNA Interference Mediated by Cell-Penetrating Peptides <i>Cheng-Yi Lee, Betty Revon Liu, Ya-Hui Wang, Yu-Wun Hou, Jyh-Ching Chou and Han-Jung Lee</i>	335
Chapter XVI	Asymmetric RNA Duplexes as Next Generation RNAi Inducers <i>Dong-ki Lee, Soyoun Kim, Andrew C. Keates and Chiang J. Li</i>	343
Index		349