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	 2.3.3 Non-Hybridization-Based (Non-Imaging) Methods2.3.4 Imaging-Based (Non-Hybridization) Methods; 2.3.5 Imaging-Based (Hybridization) Methods; 2.4 Case Study for siRNA Delivery Analysis; References; 3 Challenges and Opportunities in Bringing RNAi Technologies from Bench to Bed; 3.1 Introduction; 3.2 RNAi Mediator (siRNA or shRNA); 3.2.1 siRNA; 3.2.2 Vector-derived shRNA; 3.2.3 miRNAs; 3.3 Safety Issues of RNAi Mediators; 3.3.1 Immune Stimulation; 3.3.2 RNAi Overexpression; 3.4 Efficacy of RNAi Mediators; 3.4.1 Therapeutic Response; 3.5 RNAi Mediators in Clinical Trials; 3.6 Conclusion References4 Nonclinical Safety Assessments and Clinical Pharmacokinetics for Oligonucleotide Therapeutics: A Regulatory Perspective; 4.1 Introduction; 4.2 Unique Properties of Oligonucleotide-based Therapeutics; 4.3 Regulatory Issues; 4.3.4 Clinical Pharmacokinetics; 4.3 Regulatory Issues; 4.3.4 Clinical Pharmacokinetics; 4.4 Conclusion; Disclaimer; Appendix; References; 5 Role of Promoters and MicroRNA Backbone for Efficient Gene Silencing; 5.1 Introduction; 5.2 Promoters for shRNA Expression 5.2.1 Constitutive Promoters5.2.2 Inducible Promoters; 5.2.3 Site Specific Promoters; 5.3 miRNA-based shRNA; 5.3.1 miRNA-based shRNA Reduces Toxicities; 5.3.3 Application of miRNA-based shRNA for Combination Gene Therapy; 5.4 Concluding Remarks; References; Part 2: RNAi Delivery Strategies; 6 Bioconjugation of siRNA for Site-specific Delivery; 6.1 Introduction; 6.2.2 Site of Conjugation; 6.2.3 Conjugation Chemistry; 6.3 Bioconjugates for Site-specific Delivery
Sommario/riassunto	"Commonly used by researchers to develop technologies for modifying and studying genetic process, RNA interference (RNAi) has many potential uses in medicine, biotechnology, and functional genomics. This book covers all essential aspects involved in the development of RNAi therapeutics, providing detailed guidance on the challenges and opportunities of bringing RNAi technologies from bench to clinic. It explores the design and mechanism of RNAi molecules, delivery strategies, and therapeutic applications in various diseases. Preclinical, regulatory, market, and intellectual aspects of RNAi technologies are also covered" "All of the essential aspects of developing RNAi therapeutics from bench to clinic presented in a single volume"