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Nota di contenuto	Chapter 1. The Role of MicroRNAs in Cancer Biology and Therapy from a Systems Biology Perspective -- Chapter 2. Circulating MicroRNAs as Cancer Biomarkers in Liquid Biopsies -- Chapter 3. Regulation of Immune Cells by MicroRNAs and MicroRNA-Based Cancer Immunotherapy -- Chapter 4. Machine-Learning-Based Methods and Best Practices of MicroRNA-Target Prediction and Validation -- Chapter 5. Turning Data to Knowledge: Online Tools, Databases and Resources in MicroRNA Research -- Chapter 6. Bioinformatics Methods for Modeling MicroRNA Regulatory Networks in Cancer -- Chapter 7. Analysis of the p53/MicroRNA Network in Cancer -- Chapter 8. Machine Learning Using Gene-Sets to Infer miRNA Function -- Chapter 9. miRNA:miRNA Interactions: A Novel Mode of miRNA Regulation and Its Effect on Disease -- Chapter 10. ClustMMRA v2: A Scalable Computational Pipeline for the Identification of MicroRNA Clusters Acting Cooperatively on Tumor Molecular Subgroups -- Chapter 11. 3D Modeling of Non-coding RNA Interactions.

Sommario/riassunto

This book provides an update on the latest development in the field of microRNAs in cancer research with an emphasis on translational research. Since the early 2000s, microRNAs have been recognized as important and ubiquitous regulators of gene expression. Soon it became evident that their deregulation can cause human diseases including cancer. This book focuses on the emerging opportunities for the application of microRNA research in clinical practice. In this context, computer models are presented that can help to identify novel biomarkers, e.g. in circulating microRNAs, and tools that can help to design microRNA-based therapeutic interventions. Other chapters evaluate the role of microRNAs in immunotherapy, immune responses and drug resistance. Covering key topics on microRNAs in cancer research this book is a valuable resource for both emerging and established microRNA researchers who want to explore the potential of microRNAs as therapeutic targets or co-adjuvants in cancer therapies.