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Autore	Tiwari Shikha
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Nota di contenuto	-- Chapter 1: The Biogenesis, Regulation, and Canonical and Non-Canonical Functional Machinery of miRNAs -- Chapter 2: miRNA Deregulation and Its Role in Progression and Advancement of Cancer -- Chapter 3: Significance of Altered miRNA Expression in Tumor and Therapeutic Scopes -- Chapter 4: Therapeutic Approach with Tumor Suppressor miRNAs -- Chapter 5: From Soil to Simulation: Digital Twins and the Future of Smart Agriculture -- Chapter 6: miRNAs in the Regulation of DNA Damage Repair, Epithelial–Mesenchymal Transition, and Cancer Therapy Resistance -- Chapter 7: miRNA Modulation of Cancer Therapeutic Resistance due to Failed Autophagy and Cancer Stemness -- Chapter 8: Development of Resistance in Tumor for the Available Conventional Therapies -- Chapter 9: miRNA Delivery

Systems, Improvements, and Challenges -- Chapter 10:miRNA-Based Combinatorial Approaches for Therapeutic Efficacy Improvement in Chemotherapy of Relapsed and Multi-Drug Resistant Tumors -- Chapter 11:Combination of miRNA and Radiotherapy -- Chapter 12: miRNAs as Micro Managers of Immunotherapy Resistance and Side Effects -- Chapter 13:Anti-Angiogenic miRNA-Based Combination Therapy -- Chapter 14:Combination of miRNA and Photodynamic and Photothermal Anti-Cancer Therapy -- Chapter 15:Exosomal miRNAs and Their Therapeutic Implications in Cancer -- Chapter 16:Clinical Trials and Patent Updates of miRNA Therapy in Cancer -- Chapter 17: The Trials and Tribulations of the microRNA Therapy Market.

Sommario/riassunto

This book presents the latest research on combination cancer therapy and the transformative role of microRNA (miRNA) modulation in improving treatment precision and outcomes. It explores how miRNAs—key regulators of gene expression—can enhance the efficacy of chemotherapy, radiotherapy, and immunotherapy while reducing toxicity and resistance. With insights into mechanisms, delivery strategies, and clinical applications, the book bridges molecular research and clinical translation. It highlights recent progress in miRNA-based combination therapies, including advances in delivery systems, tumor targeting, and translational trials. A valuable reference for clinicians, oncologists, molecular biologists, and cancer researchers, this work provides a forward-looking perspective on harnessing miRNA therapeutics to shape the next generation of cancer treatment.