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Collana	RNA Technologies Series ; ; Volume 14
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Nota di contenuto	1. Computational Tools for Functional Analysis of Circular RNAs -- 2. The Hidden Layer of RNA Variants -- 3. Functional Role of Non-Coding RNAs in Prostate Cancer: From Biomarker to Therapeutic Targets -- 4. The structure, function, and modification of non-coding RNAs in cardiovascular system,- 5. Contribution of RNA Species in Sexually Transmitted Infections -- 6. Hypoxia and Epithelial-to-Mesenchymal Transition (EMT) in Cancer: A Non-Coding RNA Perspective -- 6. A Study on the Role of piRNAs in Cancer Epigenetics -- 7. Modified Nucleosides as RNA Components. Structure, Biological Role and Drug Design -- 8. Multifaceted Functions of RNA m6A Modification in Modulating Regulated Cell Death -- 9. Incorporation of Pseudouridine into RNA for Biochemical and Biophysical Studies -- 10. Molecular Dynamics Simulations of Chemically Modified Ribonucleotides.
Sommario/riassunto	This book focuses on the current status of our understanding of RNA, a key biological molecule. The various RNAs covered are messenger RNA, ribosomal RNA, transfer RNA, noncoding RNAs, modified nucleosides, and RNA enzymes. The different chapters detail methods to investigate RNA structure and function, the chemistry of modified RNAs, and the latest advances in our understanding of the vast array of biological processes in which RNA is involved. RNA, in one form or another,

touches almost everything in a cell. RNA has both structural and catalytic properties. RNA fulfills a broad range of functions. These molecules are no longer seen as passive elements transferring the genetic information from DNA into proteins but regulate the activity of genes during development, cellular differentiation, and changing environments. RNAs are involved in various aspects of cell physiology and disease development. Discoveries of RNA with unexpected diverse functions in healthy and diseased cells, such as the role of RNA as both the source and countermeasure to cancer or severe viral infection, stimulate new trends, passion, and solutions for molecular medicine. In this book, fundamental questions about the biochemical and genetic importance of RNA, how mRNAs are generated and used to produce proteins, how noncoding and catalytic RNAs mediate key cellular processes, how to determine RNA structure and how to apply RNA in treatment of diseases. This book is an essential resource for researches in academia and industry contributing to the development of new RNA therapeutics. The book is geared toward scientists from the graduate level on up and particularly appeals to active investigators in RNA biology, molecular biology, and biochemistry.