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Collana	RNA Technologies, , 2197-9758 ; ; 12
Disciplina	572.865
Soggetti	Epigenetics RNA - Metabolism Biochemistry Bioinformatics RNA Metabolism Biological Chemistry Transcripció genètica Epigenètica Llibres electrònics
Lingua di pubblicazione	Inglese
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Nota di contenuto	Epitranscriptomic Modifications and How to Find them -- Epitranscriptomic Signature in Neural Development and Disease -- The Emerging Neuroepitranscriptome -- Epitranscriptomics and Diseases -- Epitranscriptomic Marks and Systems Involved in Gene Regulation, Development and Disease -- Experimental Approaches and Computational Workflows for Systematic Mapping and Functional Interpretation of RNA Modifications -- RNA Modifications: The Mediator Between Cellular Stresses and Biological Effects -- Computational Prediction and Experimental Validation of Specific Modified RNA Sites -- Regulation of RNA Stability Utilizing RNA Modification -- Dynamic RNA Modification Upon Extracellular Stimulus -- RNA Methylation in Cancer -- Regulation of RNA Methylation by TET Enzymes -- RNA N6-Methyladenosine and G-Quadruplex Structures in Bacteria -- RNA N6-Methyladenosine Chemical Modification as a Therapeutic Target -- Cap-Adjacent m6Am and its Effects On mRNA -- N6-Methyladenosine

in The Heart -- The m6a RNA Methylation Regulates Oncogenic Signaling Pathways Driving Cell Transformation and Carcinogenesis -- Psivar: A Database of Functional Variants Involved in Pseudouridylation () with Implications for Disease Pathogenesis -- C-to-U RNA Editing by Mammalian APOBEC Enzymes -- The Powerful Mechanism of RNA Editing and its Therapeutic Potentials -- Noncanonical Caps in RNA -- Mass Spectrometry-Based Methods for Characterization of Hypomodifications in tRNA -- Dynamic mRNA Modifications in Plants -- The Mammalian Mitochondrial Epitranscriptome -- Epitranscriptomics Modifications of Micronas: Classes, Detection, Impact on their Functionality and Next Frontiers -- "Look Before You Leap" when Editing the Introns, or the Secrets Behind the Intronic Post-Transcriptional Modification -- Functional Links Between the Internal N6-Methyl Adenosine Modifications in mRNAs and Human Diseases -- RNA Modifications in Neurodevelopment and Neurodegenerations -- Conventional and Advanced Techniques for Methyl-6-Adenosine Modification Mapping in Transcripts -- Mechanisms and Therapeutic Applications of RNA-Guided RNA Pseudouridylation -- Epitranscriptomic Modifications in lncRNA and miRNA in Cancer and Other Diseases -- RNA m6A and Adipogenesis.

Sommario/riassunto

This book reviews a novel and exciting field of cellular and molecular biology called epitranscriptomics, which focuses on changes in an organism's cells resulting from the posttranscriptional modification of cellular RNA. RNA-binding proteins (RBPs) play a crucial role in these posttranscriptional modifications and also support several cellular processes necessary for maintaining RNA homeostasis. Exploring the mechanisms underlying RNA modifications and RBP function is an emerging area of biomedical research, taking the study of gene regulation a step beyond epigenetics. This book reveals that the RNA molecule is not just an information-carrying molecule with some secondary structures. Accordingly, how RNA is modified, regulated, packaged, and controlled is an important aspect. Leading experts address questions such as where the over 170 distinct posttranscriptional RNA modifications are located on the genome, what percentage of mRNAs and noncoding RNAs these modifications include, and how an RNA modification impacts a person's biology. In closing, the book reviews the role of RNA modifications and RBPs in a variety of diseases and their pathogenesis. Addressing some of the most exciting challenges in epitranscriptomics, this book provides a valuable and engaging resource for researchers in academia and industry studying the phenomena of RNA modification.
