

REGULATION OF GENE EXPRESSION BY SMALL RNAs

Endogenous small RNAs have been found in various organisms, including humans, mice, flies, worms, fungi, and bacteria. Furthermore, it's been shown that microRNAs acting as cellular rheostats have the ability to modulate gene expression. In higher eukaryotes, microRNAs may regulate as much as 50 percent of gene expression.

Regulation of Gene Expression by Small RNAs brings together the pioneering work of researchers who discuss their work involving a wide variety of small RNA regulatory pathways in organisms ranging from bacteria to humans. In addition to exploring the biogenesis and processing of these regulatory RNAs, they also consider the functional importance of these pathways in host organisms. Assisting current and future researchers, this unique groundbreaking work —

- Provides a suite of cutting-edge resources for the study of microRNA ontology and function
- Includes a technology guide for those seeking to assay microRNA expression
- Explores the mechanisms by which microRNAs regulate gene expression in animal cells, including the regulation of gene expression by RNA-mediated transcriptional gene silencing
- Discusses a fast and low-cost approach for reversing genetic influences in mammals
- Looks at breakthroughs in the use of microRNA-based therapy for HIV and cancer

This volume captures the essence of the breadth and excitement surrounding the newly discovered regulatory roles of small RNAs. The powerful new approach in the study of gene function described in this text is leading to some remarkable findings that have the potential to revolutionize our understanding of genetic function and the treatment of diseases otherwise considered intractable.

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