

RNA interference (RNAi) is a system within living cells that helps to control active genes and their activity level. Two types of small RNA molecules—microRNA (miRNA) and small interfering RNA (siRNA)—are central to RNA interference. The discovery of RNAi was preceded first by observations of transcriptional inhibition by antisense RNA expressed in transgenic plants and more directly by reports of unexpected outcomes in experiments performed by plant scientists in the U.S. and The Netherlands in the early 1990s. RNAi technology are used for large-scale screens that systematically shut down each gene in the cell, which can help identify the components necessary for a particular cellular process or an event such as cell division. Exploitation of the pathway is also a promising tool in biotechnology and medicine.

This book reviews the selective and robust effect of RNAi on gene expression which makes it a valuable research tool, both in cell culture and in living organisms because synthetic dsRNA introduced into cells can induce suppression of specific genes of interest. This book will introduce new technology in the study of RNA interference in microorganisms, plants and animals.



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