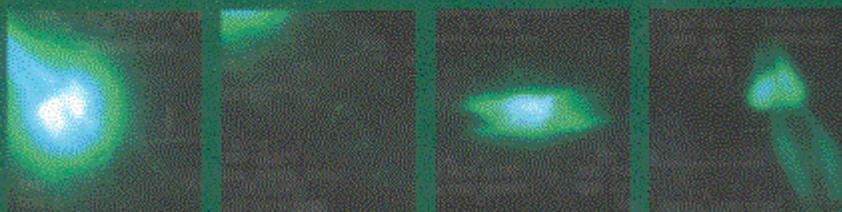


MicroRNAs in Development and Cancer



MicroRNAs have recently emerged as key regulators of gene expression during development and are frequently misexpressed in human disease states, in particular cancer. These 22-nucleotide-long transcripts act to promote or repress cell proliferation, migration and apoptosis during development, all of which are processes that go awry in cancer. Thus, microRNAs have the ability to behave like oncogenes or tumor suppressors. In addition, their small size and molecular properties make them amenable as targets and therapeutics in cancer treatment. This book goes into detail on how microRNAs represent a paradigm shift in thinking about gene regulation during development and disease, and provide the oncologist with a potentially powerful new battery of agents to diagnose and treat cancer.

Front cover: Fluorescence image of a larval C. elegans animal showing expression of a mir-84::gfp fusion in the pharynx (top left), uterus (bottom middle) and tail (top right). Background shows potential duplexes formed between the miRNA and the RAS oncogene.

Credit: Steven Johnson.

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