

GEN reports on therapeutic potential of microRNA

March 19 2010

Researchers around the globe are working on turning microRNAs, over 5,000 of which already have been identified, into novel drugs for a wide range of applications, reports *Genetic Engineering & Biotechnology News* (GEN). These noncoding single-stranded RNAs act through binding to complementary mRNA sequences, thus preventing their translation into protein or accelerating mRNA breakdown, according to the March 15 issue of GEN.

"MicroRNAs play an important role in various cellular processes, including cell growth, differentiation, proliferation, and apoptosis," says John Sterling, Editor-in-Chief of GEN. "As a result, scientists are studying them as potential therapeutics for a number of disease, particularly cancer."

For example, researchers at Eastern Virginia Medical School are analyzing how miRNAs control developmental events. Aurora Esquela-Kerscher, Ph.D., of the department of microbiology and molecular cell biology, is shedding light on the role of the let-7 miRNA family in processes related to cellular growth and differentiation. Since the early phases of carcinogenesis resemble embryonic development, often involving the re-expression of embryonic mesenchymal genes, many of the same cellular processes used to direct appropriate embryonic development are the same mechanisms that go awry in cancerous tissues.

Investigating another disease indication, Kai-Christian Sonntag, M.D., Ph.D., assistant professor of psychiatry at Harvard Medical School, is

looking to determine whether dysregulation of signaling pathways in Parkinson disease (PD) pathogenesis are associated with deregulated miRNAs. He and his colleagues, through miRNA profiling on laser-microdissected dopaminergic neurons from normal individuals and PD patients, have found distinct miRNA expression patterns.

More information:

<http://www.genengnews.com/articles/chitem.aspx?aid=3216>

Provided by Mary Ann Liebert, Inc.

Citation: GEN reports on therapeutic potential of microRNA (2010, March 19) retrieved 27 April 2024 from <https://phys.org/news/2010-03-gen-therapeutic-potential-microrna.html>

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