



Mirna Therapeutics Publishes Data Demonstrating In Vivo Proof of Concept for miR-34a microRNA Replacement Therapy in Cancer

AUSTIN, TX - June 29, 2010 - Mirna Therapeutics announced today publication of new results in the journal *Cancer Research* demonstrating proof of concept that the systemic delivery of tumor suppressor microRNAs (miRNA) inhibits tumor growth by restoring the proper regulatory pathways required for cell cycle arrest and apoptosis.

The new study builds on earlier work indicating that suppression of miR-34a contributes to the development of a significant number of solid tumors. A synthetic mimic of miR-34a developed at Mirna formulated with lipid-based nanoparticles was delivered in two different mouse models of non-small cell lung cancer. The systemically delivered miR-34a molecules reduced the expression of multiple miR-34a targets, induced apoptosis, and inhibited growth of established tumors. Intravenous delivery of formulated miR-34a did not cause changes in the serum levels of cytokines or liver and kidney enzymes, suggesting the formulation is well tolerated and does not induce an immune response.

"Tumor suppressor microRNAs provide a new approach to the treatment of cancer. We believe the potent anti-oncogenic activity observed in this study might be explained by the fact that miRNAs target multiple oncogenes and oncogenic pathways. Thus, the ability to affect multiple cancer pathways seems to be a key benefit of therapeutic miRNA mimics. We are pleased with the development progress of miR-34a, one of our lead miRNA therapeutic candidates," said Paul Lammers, M.D., President and CEO. "This recently published data provides proof of concept for our deep pipeline of miRNA-based therapeutic candidates."

About microRNA

Similar to siRNAs, miRNAs are approximately 21 nucleotides long and affect gene expression by interacting with messenger RNAs. Unlike siRNAs, miRNAs are encoded in the human genome and are used as natural regulators of global gene expression. More than 900 miRNAs are encoded in the human genome and comprise approximately 2% of all mammalian genes. Since each miRNA appears to regulate the expression of tens to hundreds of different genes, miRNAs can function as "master-switches," efficiently regulating and coordinating multiple cellular pathways and processes. By coordinating the expression of multiple genes, miRNAs are responsible for guiding proper embryonic development, immunity, inflammation, as well as cellular growth and proliferation. Misregulation of miRNAs appears to play a fundamental role in many cancers and replacement of down regulated miRNAs in tumor cells results in a positive therapeutic response.

About Mirna Therapeutics

Mirna Therapeutics, Inc. (Mirna) is a biotechnology company founded in late 2007 as a spin-off from Asuragen Inc. and is located in Austin, Texas. Mirna is focused on the development of miRNA-directed therapeutics for the treatment of cancer and other diseases. Mirna is developing "MicroRNA Replacement Therapy" which involves introducing microRNAs back into tumors to boost cellular tumor suppressor abilities, ultimately leading to cancer cell death and tumor shrinkage.

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