



Mirna Therapeutics and Collaborators Publish New Data on miR-34 and its Role in Cancer Stem Cells

AUSTIN, TX – January 18, 2011 - Mirna Therapeutics, Inc., a leading developer of microRNA (miRNA)-based therapeutics, announced today the publication of new data in the journal *Nature Medicine* describing the role of the tumor suppressor miRNA, miR-34, in preventing cancer stem cell development. The published results reveal that miR-34 is commonly down-regulated in prostate cancer stem cells and that this down-regulation is essential for cancer stem cell viability. Systemic delivery of a miR-34 mimic inhibited tumor growth and metastasis in mice bearing prostate tumors. These new data support Mirna's previous publication in the journal *Cancer Research* that showed that the systemic delivery of a miR-34 mimic can inhibit tumor growth in mouse models of lung cancer.

The *Nature Medicine* publication resulted from a collaboration between scientists at Mirna Therapeutics and the University of Texas MD Anderson Cancer Center. The MD Anderson team was led by Dean Tang, M.D., Ph.D., Professor, Department of Carcinogenesis.

"The collaborative effort with the Tang lab allowed us to establish a compelling link between miR-34 and cancer stem cell development," said David Brown, Ph.D., Director of Research at Mirna Therapeutics. "Our results suggest that the miR-34 mimic developed at Mirna might be particularly effective in combating the most aggressive cancer cells in patients."

"In the past year, Mirna Therapeutics has published four peer-reviewed articles demonstrating the therapeutic activity of tumor suppressor miRNAs in mouse models of cancer. Our published work has featured eight different cancer models and three different tumor suppressor miRNAs across multiple laboratories and provides compelling proof of concept for the robustness of miRNA replacement therapy," said Paul Lammers, M.D., President and CEO. "We are very pleased with our progress and look forward to moving our lead therapeutic candidates into clinical testing."

About microRNA

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 1000 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. For more information, visit www.mirnarx.com.

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