



Mirna Therapeutics and Collaborators Publish New Data on *in vivo* Delivery of microRNA Mimics

AUSTIN, TX - March 23, 2011. Mirna Therapeutics, Inc. announced today the publication of new results in the journal *Molecular Therapy* demonstrating how a neutral lipid emulsion facilitates the systemic delivery of tumor suppressor miRNA mimics and reduces the tumor burden in the lungs of mice.

The publication resulted from a collaboration with the laboratory of Frank Slack, Ph.D. at Yale University, New Haven, CT. The two teams used a transgenic mouse model of lung cancer to demonstrate that intravenous administration of lipid-formulated miRNA mimics induces a specific RNA interference response in cancer cells and inhibits tumor growth.

The new work features miRNA mimics modeled after the natural tumor suppressors *let-7* and miR-34, two of the Company's lead therapeutic compounds in development. "Both miRNAs are reduced in many cancer types and have been implicated in the regulation of cancer stem cells," said Andreas Bader, Ph.D., Associate Director of Research at Mirna. "By adding these miRNAs back to the tumor, we aim to restore cellular pathways that eliminate cancer cells."

"The successful therapeutic delivery of our miRNA mimics in a clinically-relevant tumor model is an important milestone in bringing therapeutic miRNAs to the clinic," commented Paul Lammers, M.D., President and CEO of Mirna. "These data add to the increasing body of evidence that our technology can be applied in a therapeutic context. We are pleased with the progress of our pipeline and the development of miRNAs as potential future medicines for cancer patients."

The Company has previously published data showing systemic delivery of miRNA mimics using polymer-based nanoparticles (Takeshita *et al.*, *Mol. Ther.*, 2010) and the neutral lipid emulsion (Wiggins *et al.*, *Cancer Res.*, 2010; Liu *et al.*, *Nat. Med.*, 2011).

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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