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Mirna Therapeutics Announces Data Presentations at the Annual Meeting of the American Association for Cancer Research

Results reported in two poster presentations suggest MRX34 combination regimens may enhance effectiveness of standard cancer therapies

AUSTIN, Texas--(BUSINESS WIRE)-- Mirna Therapeutics, Inc. (Nasdaq:MIRN), a clinical stage biopharmaceutical company developing a broad pipeline of microRNA-based oncology therapeutics, today announced the presentation of new preclinical data at the American Association for Cancer Research (AACR) Annual Meeting 2016 in New Orleans. Researchers reported results in two poster presentations from experiments demonstrating that the Company's lead microRNA therapeutic, MRX34 (miR-34), is synergistic with widely used cancer chemotherapies and next-generation tyrosine kinase inhibitors (TKIs).

"These *in vitro* data suggest that MRX34 has strong potential in combination with other cancer drugs," commented Miguel Barbosa, Ph.D., Mirna's Chief Scientific Officer. "The ability of miR-34 to control multiple oncogenic pathways may overcome both primary and acquired resistance when used in combination with chemotherapy or TKIs."

In a poster (#4829) entitled, "miRNA Combination Therapy: *in vitro* Anticancer Synergy Between miR-34a Mimic and Cytotoxic Chemotherapy (CT) in NSCLC," researchers from Mirna and the University of Texas Health Science Center at San Antonio reported:

- Synergistic anticancer effects were observed between miR-34a and platinum and other commonly used cytotoxic chemotherapy drugs, across a range of non-small cell lung cancer (NSCLC) cell lines with varying degrees of resistance.
- The synergy observed suggests the potential for lower, less toxic doses of chemotherapy than currently used in the clinic when in combination with miR-34a.

In a second poster (#4814) entitled, "MicroRNA (miRNA) Combination Therapy: *in vitro* Anticancer Synergy Between miR-34a Mimic and Next Generation EGFR Tyrosine Kinase Inhibitors (TKIs) in NSCLC," researchers from Mirna reported:

- Synergistic anticancer effects were shown between miR-34a and next-generation EGFR TKIs afatinib and rociletinib against a range of wild-type and mutant NSCLC cell lines. These results extend similar findings with the first-generation EGFR TKI erlotinib (Zhao et al, PLoS ONE 9(2):e89105).
- Results support the potential of MRX34 and EGFR TKI combinations to overcome both primary and acquired resistance to EGFR TKIs in patients with NSCLC.

Mirna is a grant recipient of the Cancer Prevention Research Institute of Texas (CPRIT) for preclinical and clinical testing of microRNA and targeted drug combination therapies, and also of the National Institutes of Health (NIH) for the study of combination molecular therapies for lung cancer, as well as miRNAs in combination with standard of care chemotherapy.

The posters may be accessed from the Events & Presentations section of the Company's website.

About Mirna Therapeutics, Inc.

Mirna is a clinical stage biopharmaceutical company developing a broad pipeline of microRNA-based oncology therapeutics and is the first to establish clinical proof-of-concept for a microRNA replacement therapy for cancer. Mirna's lead product candidate, MRX34, a mimic of naturally occurring microRNA-34 (miR-34), is currently being studied in a Phase 1 clinical trial in patients with primary liver cancer, advanced solid tumors and hematological malignancies. miR-34 is one of the most widely published microRNAs and is considered a key regulator of multiple oncogenes across key oncogenic pathways, with the capacity to regulate more than 30 different oncogenes and repress the immune checkpoint signaling molecule PD-L1. The potential capacity to simultaneously affect multiple pathways and processes that are critical to cancer cell viability may make mimics of tumor suppressor microRNAs potent anti-cancer agents and less susceptible to drug resistance. Mirna plans to develop MRX34 as a monotherapy and in combination with other therapeutic modalities, such as targeted therapies and immuno-oncology agents. The Company was founded in 2007 and is located in Austin, Texas.

For more information, visit www.mirnarx.com.

Forward-Looking Statements

To the extent that statements contained in this press release are not descriptions of historical facts regarding Mirna, they are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements regarding our plans for MRX34 development; our preclinical and clinical activity and results of our clinical development program; and the potential efficacy of MRX34, including as a combination therapy. Such forward-looking statements involve substantial risks and uncertainties that could cause our clinical development program, future results, performance or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the uncertainties inherent in the clinical drug development process, including the outcomes of clinical trials, the regulatory approval process, our substantial dependence on MRX34, our commercialization plans and efforts and other matters that could affect the availability or commercial potential of our product candidates. Mirna undertakes no obligation to update or revise any forward-looking statements. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to our business in general, see our Annual Report on Form 10-K filed with the SEC on March 30, 2016.

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