



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
DP140067

Project Title:
Preclinical and Clinical Development of Synergistic MicroRNA + Targeted
Drug Combinations

Award Mechanism:
Established Company

Principal Investigator:
O'Neill, Vincent

Entity:
Mirna Therapeutics, Inc.

Lay Summary:

Mirna Therapeutics, Inc., is a Texas-based company developing a new class of cancer treatments that are based on naturally occurring tumor suppressor microRNAs. In April 2013, Mirna's lead product, a liposomal mimic of miR-34 (MRX34), entered a Phase I clinical trial for liver cancer. Key benefit of these therapies is the ability to simultaneously block multiple cancer processes which is important for the successful treatment of cancer that frequently originates from multiple mutations and thrives on multiple pathways. The ability to interfere with multiple cancer pathways is a new paradigm in cancer therapy that has the potential to create more effective cancer drugs. Because most cancer drugs are more effective in drug combinations, we propose here the preclinical and clinical development of one or more MRX34 combination therapies to maximize efficacy. Our primary focus will be the MRX34+erlotinib (Tarceva®) combination in non-small cell lung cancer (NSCLC), the number one cause of cancer deaths in Texas. Our preclinical data show strong synergy between the miR-34 therapy and erlotinib in erlotinib-resistant cancer cells. Because erlotinib alone, an FDA-approved drug to treat NSCLC, only benefits a limited fraction of patients, combining it with MRX34 is likely to maximize efficacy and broaden the base of patients that can be treated with this drug. Mirna will use Texas based resources and leverage relationships established with the ongoing clinical development of MRX34.