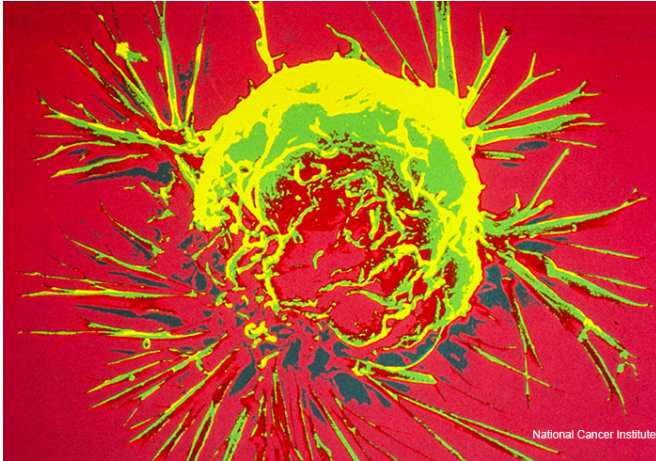


Research identifies new breast cancer therapeutic target

18 July 2018, by Leslie Capo



Credit: National Cancer Institute

Research led by Suresh Alahari, Ph.D., Professor of Biochemistry and Molecular Biology at LSU Health New Orleans School of Medicine, has shown for the first time that a tiny piece of RNA deregulates energy metabolism, an emerging hallmark of cancer. The finding identifies a new target for therapeutic intervention in breast cancer. The research is published in *Molecular Cancer*.

MicroRNAs are a class of small, single-stranded RNA molecules that play an important regulatory role in cell biology. They bind to target genes and decrease their function. MicroRNAs may act as oncogenes (a gene that contributes to [cancer](#) development) or tumor suppressors.

The LSU Health New Orleans research team has shown that miR-27b, a novel microRNA, acts as a [breast cancer](#) oncogene. It is found in abundance in [breast](#) tumors. In this study working with a line of human [breast cancer cells](#), they demonstrated that it suppresses the production of a protein called PDHX. PDHX is involved in cell metabolism, which among other things affects cell proliferation. Its

absence allows the rapid creation of new cells, promoting tumor growth and cancer progression. The team found a significant decrease in PDHX levels in breast cancer [cells](#).

"Based on this data, we believe suppression of miR-27b is a novel approach for breast cancer therapies," notes Dr. Alahari. "Suppression of miR-27b enhances PDHX expression, which helps in suppressing tumor progression through fixing several metabolic cascades."

According to the National Cancer Institute, there will be more cases of breast cancer diagnosed in the US in 2018 than other cancers. NCI estimates there will be 266, 120 new cases of breast cancer diagnosed and 40,920 deaths.

"Using microRNA mimics or anti-miRNAs can counteract and therapeutically reverse oncogene metabolism would signify a truly unique unprecedented approach to cancer treatment," Alahari adds. "The potential clinical uses of miRNA include utilization in diagnostic testing and disease prevention as well as prognostic markers making miRNAs unique and attractive options in the effort to reduce cancer morbidity and mortality."

More information: Steven C. Eastlack et al, Suppression of PDHX by microRNA-27b deregulates cell metabolism and promotes growth in breast cancer, *Molecular Cancer* (2018). [DOI: 10.1186/s12943-018-0851-8](https://doi.org/10.1186/s12943-018-0851-8)

Provided by Louisiana State University

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