

Researchers identified a protein associated with breast cancer

18 April 2018, by Cathy Frisinger



Dr. Yingfei Wang says depleting the protein ZMYND8 blocks the growth of new blood vessels in breast cancer. Credit: UT Southwestern Medical Center

Researchers at UT Southwestern Medical Center have identified a protein that is strongly associated with metastatic breast cancer and that could be a target for future therapies.

High levels of the protein ZMYND8 are correlated with poor survival in [breast cancer patients](#), said Dr. Weibo Luo, Assistant Professor of Pathology and Pharmacology, and with the Harold C. Simmons Comprehensive Cancer Center.

Previous research has shown that breast cancer cells that are more aggressive in an oxygen-deprived, or hypoxic, environment. A protein family called hypoxia-inducible factor (HIF) controls responses to hypoxia, switching on pathways that lead to cancer cell growth and spread. "Our research shows that ZMYND8 is a regulator that activates hundreds of HIF-dependent oncogenes in [breast cancer cells](#)," Dr. Luo said.

Research with a mouse model of breast cancer showed that depletion of ZMYND8 blocks the

growth of new blood vessels in tumors and leads to breast cancer cell death.

"Our studies uncovered a feedback loop that amplifies HIF-controlled oncogenes to drive breast tumor malignancy," said Dr. Yingfei Wang, Assistant Professor of Pathology, of Neurology and Neurotherapeutics, and with the Simmons Cancer Center and the Peter O'Donnell Jr. Brain Institute.

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 Research: Weibo Luo Lab, Yingfei Wang Lab
 Approximately 250,000 women were diagnosed with breast cancer in 2017, according to National Institutes of Health figures, and about 40,000 died of the disease. Metastatic breast cancer is cancer that has spread to other sites in the body, and the vast majority of breast cancer deaths occur in patients in whom the [cancer](#) has metastasized.

"This work uncovers a primary epigenetic mechanism of HIF-mediated [breast cancer](#) progression, and reveals a possible molecular target for diagnosis and treatment of aggressive disease," Dr. Luo said.

The research appears in the *Journal of Clinical Investigation*.

Provided by UT Southwestern Medical Center

APA citation: Researchers identified a protein associated with breast cancer (2018, April 18) retrieved 29 June 2022 from <https://medicalxpress.com/news/2018-04-protein-breast-cancer.html>

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