

Study find loss of certain protein is associated with poor prognosis in breast, lung cancer

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Moffitt Cancer Center researchers have found that breast and lung cancer patients who have low levels of a protein called tristetraprolin (TTP) have more aggressive tumors and a poorer prognosis than those with high levels of the protein. Their [study](#) was published in the Dec. 26 issue of *PLoS One*.

Cancer arises through the increased activity of oncogenes, proteins that drive [cancer](#) growth, and the decreased activity of tumor suppressors, proteins that block malignant growth and progression. TTP is a recently discovered [tumor suppressor protein](#), and scientists at Moffitt have found that this protein can prevent lymphoma growth in mice.

Researchers wanted to further investigate the importance of TTP in [cancer patients](#) and what other genes it is associated with in cancer. Using a detailed catalog of genetic changes in cancer developed by the National Institutes of Health, called The Cancer Genome Atlas, Moffitt scientists compared patients who had low levels of TTP to those with high levels of the protein.

These researchers found a network of 50 different genes associated with low levels of TTP in breast, lung and colon tumors. This genetic network was also present in other tumor types, including prostate, pancreatic and bladder cancer. This demonstrates that TTP is involved in a variety of mechanisms important for tumor development and growth, and suggests

that developing agents that target this network may be an effective therapeutic strategy across a wide spectrum of tumors.

They also reported that low levels of TTP were associated with poor prognosis in certain cancers, including a higher rate of relapse in [breast cancer patients](#) and lower rates of survival in lung adenocarcinoma patients. Additionally, breast and [lung cancer patients](#) with low levels of TTP tended to have more aggressive types of tumors.

"Identifying this network allows us to set up future research projects focused on understanding how TTP functions as a [tumor](#) suppressor with the ultimate goal of developing treatments specific for patients that have low levels of TTP," explained Robert Rounbehler, Ph.D., research scientist at Moffitt.

Provided by H. Lee Moffitt Cancer Center & Research Institute

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