

Study finds new drug target for metastatic breast cancer

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Research led by Dr. Suresh Alahari, Professor of Biochemistry and Molecular Biology at LSU Health Sciences Center New Orleans, is the first to report that two specific tumor suppressor genes work in concert to inhibit the growth and spread of breast tumor cells to the lungs. The research is published this week online in the *Journal of Biological Chemistry*.

Working in a mouse model, the LSUHSC research team studied LKB1, an enzyme that functions as a tumor suppressor in the small intestine, and Nischarin, a novel protein that regulates breast cancer cell migration and movement discovered by Dr. Alahari in 2000. Thirty percent of lung adenocarcinomas have an LKB1 gene mutation, and high levels of the LKB1 protein in [breast cancer cells](#) have been shown to significantly inhibit tumor growth. The LKB1-interacting protein is also structurally similar to Nischarin. The researchers suspected that the two suppressors might relate to each other, and they did in fact discover a functional and biochemical link between them.

The researchers demonstrated that Nischarin and LKB1 regulate breast cancer cell migration, anchorage-independent growth, tumor growth, and metastasis. They also identified a new pathway by which LKB1 suppresses tumor cell movement.

Metastasis, a complex process involving cell growth, [tumor cell migration](#), and invasion is a leading cause of cancer-related deaths. Therefore, it is important to identify the molecular targets that can prevent cancer metastasis.

"The molecular mechanisms of [tumor suppressor genes](#) are not clearly understood, and each discovery moves us another step closer to a treatment advance or cure," notes Dr. Alahari.

Excluding skin cancer, breast cancer is the most common type of cancer among women in the

United States. The [American Cancer Society](#) estimates 232,340 new cases of [invasive breast cancer](#) among American women this year, and 2,240 among men in the US, with 39,620 deaths in women and 410 deaths in men.

Provided by Louisiana State University

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