

New protein may suppress breast cancer growth

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Research led by Dr. Suresh Alahari, the Fred Brazda Professor of Biochemistry and Molecular Biology at LSU Health Sciences Center New Orleans and its Stanley S. Scott Cancer Center, has found that a protein discovered by his laboratory can inhibit the growth of breast cancer cells. The research will be published September 14, 2011 online in the *Journal of the National Cancer Institute*.

Building upon Dr. Alahari's earlier discovery of Nischarin, a novel protein that regulates breast cancer cell migration and movement, this current study examines the presence and levels of Nischarin in breast cancer tumor tissue from 300 women as well as normal breast tissue samples. The researchers also generated derivatives of human metastatic [breast cancer cells](#) to test by manipulating the protein in a mouse model.

"We found that normal human breast tissue samples had statistically significantly higher levels of Nischarin compared with tumor tissue samples," notes Dr. Alahari, "and tumors grew significantly faster in the cells where we blocked the production of Nischarin. Tumor growth and metastasis were also reduced in the samples where we manipulated the overproduction of Nischarin. Our research shows that Nischarin can function as a [tumor suppressor](#) of breast cancer, inhibiting breast cancer progression."

The research team also describes the regulation of Nischarin and reports the genetic mechanism by which this protein suppressed [breast tumor](#) growth, information that could be used to target new treatment

approaches.

Excluding skin cancer, breast cancer is the most common type of cancer among women in the United States. The National Cancer Institute estimates 230,480 new cases among American females this year, and 2,140 among men in the US, with 39,520 deaths in women and 450 deaths in men.

Risk factors include aging, weight gain, combined hormone therapy, [physical inactivity](#), and consumption of one or more alcoholic beverages per day. A family history increases risk, as does never having had children or having a first child after age 30.

Mammography can often detect breast cancer at an early stage when treatment options are greatest and a cure is possible.

"Next steps include determining whether Nischarin controls some of its tumor suppressor roles through regulation of the pathways we reported in this paper," concludes Dr. Alahari, "and these studies are already underway."

The LSUHSC research team also included Dr. Robin McGoey, Associate Professor of Pathology, as well as postdoctoral fellows, Drs. Somesh Baranwal, Yanfang Wang, Rajamani Rathinam, and Lianjin Jin. Researchers from Duke University and Memorial Sloan Kettering Cancer Center also contributed.

Provided by Louisiana State University

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