

Researchers identify new cancer marker and possible therapeutic target for breast cancer

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A new way to detect - and perhaps treat - one of the deadliest types of breast cancer has been found. Led by researchers at Boston University School of Medicine (BUSM), the study appears online in *Breast Cancer Research*.

Basal-like breast cancer (BLBC) is an aggressive form of breast cancer and is often referred to as "triple negative," which means it is not responsive to the common medical therapeutics. BLBC is more likely to metastasize - or spread to different areas of the body - quicker and earlier, and is associated with a poor prognosis. Women younger than 40 and African-American women are more likely to have this type, but so far there has been limited success in treating it, especially once it has metastasized.

One of the challenges has been to identify specific markers for metastatic BLBC, which would allow development of drugs and prediction of survival. Researchers from BUSM and the University of Cyprus compared the markers on the surface of the cancer cells to gene expression profile of [breast tumors](#) deposited by researchers in international public databases and found that a molecule named IL13RA2 (IL13R alpha2) was abundant in metastatic or late-stage BLBC. When they looked at publically available data on patients, they were able to predict the likelihood of progression-free survival based on whether the cancer cells had high levels of IL13RA2. The group also discovered that a subtype of BLBC that tended to spread to the lungs quickly had high IL13RA2 levels.

When the researchers reduced the amount of IL13RA2 expression in the cancer cells, they found that the tumor growth was significantly slower in models. Furthermore, models that received the altered cancer cells had very small or no metastasis to the lungs, which suggested that IL13RA2 was involved in cancer growth and spread.

"This discovery offers a glimmer of hope for patients stricken with BLBC. Personalized cancer therapies could be developed by targeting breast [cancer cells](#) that express copious levels of IL13RA2," explained corresponding author Sam Thiagalingam, PhD, associate professor of genetics & genomics, medicine and pathology & laboratory medicine at BUSM.

According to the researchers the possibilities do not end with [breast cancer](#). Other deadly cancers, including brain, pancreatic, ovarian, and colonic cancers also can have high levels of IL13RA2 which suggests its importance. "Studies directed at this biomarker will be of high significance to improve the quality of life of all cancer patients harboring this alteration," added Thiagalingam.

While this is hopeful news for some patients, more research is needed to further understand not only IL13RA2, but other molecules in breast cancers that may guide diagnosis, prognosis, and ultimately drug development and therapy.

Provided by Boston University Medical Center

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