Chemoprevention biomarker for breast cancer identified

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Researchers at Duke University Medical Center have identified a possible biomarker for measuring progress in breast cancer chemoprevention trials, according to data presented at the Ninth Annual AACR Frontiers in Cancer Prevention Research Conference, held here Nov. 7-10, 2010.

Although breast cancer treatments are constantly being tested, the progress in chemoprevention has been slower because of a lack of reasonable outcomes that can be measured, according to lead researcher Victoria Seewaldt, M.D., director of the prevention program at the Duke University Comprehensive Cancer Center.

"No one expects to get cancer, so we can't measure the rate of people who do not get cancer as a measure of success," said Seewaldt. "The trials would need to be at least 20,000 patients. By identifying this biomarker, we can set up trials that would need only 200 patients."

Seewaldt and colleagues tested for protein network signaling in breast cells from women at high risk for breast cancer. This analysis identified three signaling pathways that would indicate increased risk of breast cancer: Akt/mTOR/PI3K/cSrc, EGFR/MEK/ERK and HER2/bcl-2. Drugs that could lower the rate of these molecular signals could, therefore, prevent increased risk of breast cancer.

"One of the great struggles of chemoprevention is that we cannot crack what happens inside the breast," said Seewaldt. "Using protein signaling,

we will be able to figure out which pathways are active before and after a chemoprevention agent."

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