Chemoprevention Biomarker for Breast Cancer Identified

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• Chemoprevention trials currently lack biomarker measures.
• Researchers tested protein network signaling in women.

PHILADELPHIA — 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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The mission of the American Association for Cancer Research is to prevent and cure cancer. Founded in 1907, the AACR is the world’s oldest and largest professional organization dedicated to advancing cancer research. The membership includes 32,000 basic, translational and clinical researchers; health care professionals; and

cancer survivors and advocates in the United States and more than 90 other countries. The AACR marshals the full spectrum of expertise from the cancer community to accelerate progress in the prevention, diagnosis and treatment of cancer through high-quality scientific and educational programs. It funds innovative, meritorious research grants, research fellowships and career development awards. The AACR Annual Meeting attracts more than 18,000 participants who share the latest discoveries and developments in the field. Special conferences throughout the year present novel data across a wide variety of topics in cancer research, treatment and patient care. Including *Cancer Discovery*, the AACR publishes seven major peer-reviewed journals: *Cancer Research; Clinical Cancer Research; Molecular Cancer Therapeutics; Molecular Cancer Research; Cancer Epidemiology, Biomarkers & Prevention*; and *Cancer Prevention Research*. AACR journals represented 20 percent of the market share of total citations in 2009. The AACR also publishes *CR*, a magazine for cancer survivors and their families, patient advocates, physicians and scientists.

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