Drug shows promise for triple-negative breast cancer

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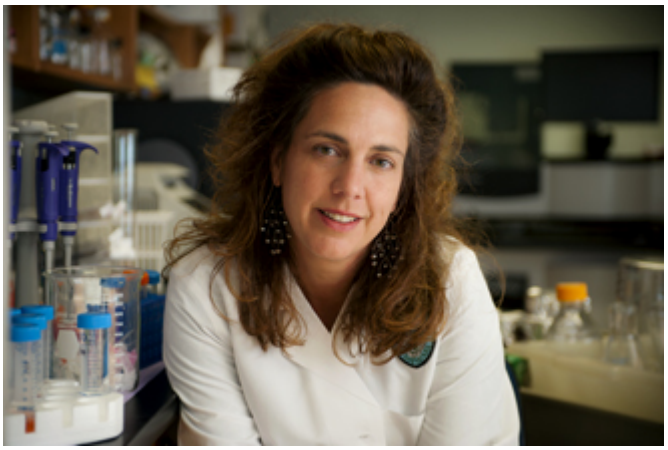
anead@tulane.edu

A promising new therapy for hard-to-treat triple-negative breast cancer has been reported in the journal *Breast Cancer Research* by a team at the Tulane University School of Medicine, led by Dr. Bridgette Collins-Burow.

More than one million cases of breast cancer are diagnosed worldwide every year, of which approximately 15 percent are triple-negative cancers, according to the team that reported on the study.



Tulane scientists, led by Dr. Bridgette Collins-Burow, have reported research results of a promising new therapy for triple-negative breast cancer. (Photo by Paula Burch-Celentano)

“Lack of effective therapies, young age at the onset of the disease and early metastatic spread have contributed to the poor prognoses and outcomes associated with these malignancies,” says Collins-Burow, an assistant professor of medicine.

Some kinds of breast cancer can be treated with drugs that target hormone receptors, which are protein structures on and inside cells. In healthy cells and most kinds of cancer cells, hormones attach to such receptors and provide signals to the cells for growth and functioning.

These cancers can be treated by hormonal therapies ? drugs that bind to the receptors in place of hormones, thus cutting off hormonal signaling and eventually killing the cells.

But triple-negative breast cancers lack these hormone receptors, so the cancer cells continue to flourish. Triple-negative cancers also lack the growth factor receptor HER2 and cannot be treated with monoclonal therapy such as Herceptin.

The Tulane team explored the effect of using a histone deacetylase (HDAC) inhibitor called panobinostat on triple-negative breast cancer tumors in mice. This drug inhibits the actions of rogue enzymes that are responsible for allowing the uncontrolled growth of cancer cells.

“Panobinostat selectively targeted triple-negative breast cancer cells and decreased tumor growth in mice,” says Collins-Burow. “It was also able to partially reverse the morphological changes in cells to a more epithelial type. These results show a potential therapeutic role for HDAC inhibitors, especially panobinostat, in targeting the aggressive triple-negative breast cancer.”