

MEDICAL BREAKTHROUGHS **RESEARCH SUMMARY**

TOPIC: ALPHA-TEA STRIKES DOWN ADVANCED BREAST CANCER?
REPORT: MB #4832

HER2-POSITIVE BREAST CANCER: HER2-positive breast cancer tests positive for a protein called human epidermal growth factor receptor 2 (HER2) which is a protein that promotes the growth of cancer cells. In 1 of every 5 breast cancers, the cells have extra copies of the gene that makes the HER2 protein. HER2-positive breast cancers tend to be more aggressive than other types of breast cancer. A biopsy sample of the cancer is usually tested with either immunohistochemical stains (IHC) or fluorescent in situ hybridization (FISH). The IHC test is usually done first because the FISH test takes a long time to get the results and is more expensive.

(Sources: <https://www.mayoclinic.org/breast-cancer/expert-answers/faq-20058066>, <https://www.cancer.org/cancer/breast-cancer/understanding-a-breast-cancer-diagnosis/breast-cancer-her2-status.html>)

HER2-POSITIVE BREAST CANCER TREATMENT: There are treatments available specifically for HER2-positive breast cancer. They are Enhertu (chemical name: fam-trastuzumab-deruxtecan-nxki) which is a combination of an anti-HER2 medicine that has the same basic structure as Herceptin, the chemotherapy medicine topoisomerase I inhibitor, and deruxtecan, a compound that links the other two together. Herceptin (chemical name: trastuzumab), which blocks the ability of the HER2 positive breast cancer cells to receive chemical signals that tell the cells to grow. Kadcyca (chemical name: T-DM1 or ado-trastuzumab emtansine) was designed to deliver emtansine to cancer cells in a targeted way by attaching emtansine to Herceptin. Nerlynx (chemical name: neratinib), fights HER2-positive breast cancers by blocking the cancer cells' ability to receive growth signals. Perjeta (chemical name: pertuzumab) also works against HER2-positive breast cancers by blocking the cancer cells' ability to receive growth signals and Tykerb (chemical name: lapatinib), which works against HER2-positive breast cancers by blocking certain proteins that cause uncontrolled cell growth.

(Source: <https://www.breastcancer.org/symptoms/diagnosis/her2>)

NEW HER2-POSITIVE BREAST CANCER CLINICAL TRIAL: There is a new breast cancer therapy candidate that is evaluating a combination of alpha-TEA and trastuzumab in the treatment of advanced HER2-positive breast cancer. Alpha-TEA reduces cancer growth by stimulating the body's immune response against the tumor. Trastuzumab is a targeted therapy that attaches to HER2 receptors on the surface of cancer cells. This blocks the signals that tell the cells to grow and might tag the cell for the body's immune system to get rid of it. The hope is that adding alpha-TEA to trastuzumab therapy will work better against HER2-Positive breast cancer than trastuzumab alone in cases that have become resistant to traditional treatment. The leader of the clinical study at the University of Washington School of Medicine, Doctor William Gwin says this, "is not an I.V. medicine but a pill that they would take at home. The interesting thing is it does seem to have similar effects to chemotherapy, but without the side effects. So folks may have had a lot of chemotherapy in the past with a lot of side effects and we hope this provides a new avenue of therapy that provides an anti-cancer effect and anti-cancer immune response, without the long term side effects that we see with a lot of our standard agents."

(Sources: <https://newsroom.uw.edu/news/novel-breast-cancer-therapy-candidate-enters-clinical-study>, Interview with William Gwin, MD.)

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com