

Even low-androgen triple-negative breast cancer responds to anti-androgen therapy

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A University of Colorado Cancer Center study published today in the journal *Molecular Cancer Therapeutics* shows that only about 1 percent of triple-negative breast cancer cells in a tumor must be "androgen-receptor-positive" to show benefit from anti-androgen therapies. There are no FDA-approved targeted therapies for triple-negative breast cancer. Clinical trials currently underway are showing promising preliminary results of anti-androgen-receptor therapies against triple-negative breast cancers expressing a higher percentage of androgen-receptor-positive cells.

"What we're showing is that the threshold for benefit from anti-androgen-receptor therapies in triple-negative [breast cancer](#) may be far lower than we previously thought. This is an extremely optimistic finding for many people who have been without options for targeted cancer therapy," says Valerie Barton, the study's first author and PhD candidate in the lab of CU Cancer Center investigator Jennifer Richer, PhD.

Triple-negative breast cancers are those without known hormone or genetic drivers - specifically, breast cancers that do not drive their growth with the hormones estrogen or progesterone, or with the gene HER2. Without a known driver, there has been no "target" in triple-negative breast cancer to treat with targeted therapies, and the triple-negative subtype has the worst five-year survival rate of any breast cancer. The current study is the most recent in an extremely promising line of work at the CU Cancer Center and elsewhere that aims to prove [androgen receptors](#) as an additional driver and target in breast cancer.

"We're getting closer to being able to call some triple-negative breast cancers, androgen-receptor-positive breast cancers. And we may have to start referring to the remaining triple-negative breast cancers that are completely without androgen receptors as quadruple-negative breast cancers," Barton says.

The current study treated triple-negative breast [cancer cells](#) with the anti-androgen-receptor drug Enzalutamide, currently FDA approved for use as an anti-androgen against prostate cancer. It has been previously shown that Enzalutamide is active against "luminal" triple-negative breast cancer cells that tend to have abundant androgen receptors. Barton and colleagues tested Enzalutamide against non-luminal [triple-negative breast cancer](#) cell lines that have far fewer androgen receptors.

"Even in these cells and in mouse models of tumors with low percentage of androgen receptor positive [breast cancer cells](#), we observed that Enzalutamide was significantly effective at reducing proliferation, growth, migration and invasion of cancer cells," Barton says.

"Our results suggest that anti-androgen receptor therapy may benefit a larger percentage of triple negative breast cancers than previously thought," Barton says.

Provided by University of Colorado Denver

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