

Promising findings towards targeted breast cancer therapy

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New research led by Conway Fellow, Professor Joe Duffy and Professor John Crown in St Vincent's University Hospital has reported for the first time on a new treatment that could be used in the majority of patients with triple negative breast cancer.

This research has identified a potential new [treatment](#) for a form of [breast cancer](#) known as triple negative breast cancer and which is currently difficult to treat. This new drug treatment known as APR-246 acts by blocking a mutant gene responsible for the driving the growth of triple-negative breast cancers.

Major progress has been made in the treatment of most forms of breast cancer in recent years. However, the triple negative form still remains difficult to treat. Approximately, 250 women are diagnosed with this form of breast cancer each year in Ireland.

Currently, the only form of drug-related therapy available for these [patients](#) is chemotherapy. The aim of this work was to identify a therapy specifically inhibiting genes involved in the growth of these cancers.

PhD student, Naoise Synnott tested the effects of APR-246 on cancer cells grown in the laboratory. Building on the findings of this study, the team hope that this drug can be tested as part of a clinical trial in patients with triple-negative breast cancer.

"I decided to focus my BREAST-PREDICT research on triple-negative

breast cancer because it was clear that work needed to be done to provide better and more targeted treatment for these patients. I hope that (our) work will be a big step in providing better treatment and hope to future triple-negative [breast cancer patients](#)."

Commenting on the findings, Professor Duffy, UCD Clinical Research Centre and St Vincent's University Hospital said, "If the laboratory data can be confirmed in a clinical trial, APR-246 could be the first non-chemotherapy drug used in the treatment of patients with this form of breast cancer",

Professor William Gallagher, Director of BREAST-PREDICT and UCD Conway Institute, added: "Over the last two decades, drugs such as Herceptin have been discovered to target or block proteins that are responsible for the growth of some breast cancers. However, finding a similar drug therapy for triple-negative breast cancer has so far alluded scientists, making these findings all the more important. If successful in clinical trials, APR-246 will be shown to have been effective in targeting a gene known as p53, a gene that is altered in almost all cases of triple-negative breast cancer."

A mutation of the p53 gene occurs in around 80% of these triple-negative breast cancers. Naoise and her colleagues have now shown that APR-246 can act by correcting or neutralising the mutant form of p53, which in turn stops the growth of [triple-negative breast cancer](#) cells grown in the laboratory.

More information: N.C. Synnott et al. Mutant p53: a novel target for the treatment of patients with triple-negative breast cancer?, *International Journal of Cancer* (2017). [DOI: 10.1002/ijc.30425](https://doi.org/10.1002/ijc.30425)

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