

New ways to treat hormone receptor-positive breast cancer

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A leading scientist based at Keele University in North Staffordshire has been awarded a grant worth around £20,000 by research charity Breast Cancer Campaign to find new ways to treat hormone receptor-positive breast cancer, the most common type of the disease.

Up to 80% of breast cancers overproduce the oestrogen receptor (ER), and many also overproduce the progesterone receptor (PR), which drive the growth of tumours. 'Anti-hormone' drugs exist to halt the growth of these cancers, by blocking the activity of these hormone receptors, but sometimes the cancer can become resistant to these drugs. The new research by Professor Gwyn Williams and Dr. Mark Pickard will aim to find new ways to stop these hormone receptors working, which could lead to new treatments for this type of breast cancer.

In the West Midlands breast cancer is the most common cancer in women, with nearly 4,400 new cases diagnosed every year, and over 1,000 women sadly dying from the disease each year on average.

Professor Williams said: "Hormone receptor-positive breast cancer can sometimes become resistant to the drugs used to treat it. The grant I have received from Breast Cancer Campaign will enable me to find new ways to prevent the growth of these breast cancers, which could ultimately lead to new ways to treat the disease and ultimately save lives."

ER or PR are overproduced in the cells of up to 80% of breast tumours and once activated cause the [cancer cells](#) to multiply, driving tumour

growth. They do this by binding to the DNA in places that have specific genetic codes, and activating genes that cause the cell to multiply and survive.

Professor Williams and Dr. Pickard will create short pieces of DNA in the lab which could act as 'decoys', mimicking the parts of DNA that ER or PR would normally bind to. These could then be used like drugs to block ER or PR from binding to the breast cancer cell's DNA, and so prevent them from driving the growth of breast cancer. Professor Williams and Dr. Pickard will test whether ER and PR bind to these fragments, and study what effect they have on [breast cancer](#) cells grown in the lab.

Katherine Woods, Research Communications Manager at Breast Cancer Campaign, said:

"Professor Williams' research into this area is vital and could ultimately lead to new treatments to slow down the growth of breast cancers that overproduce ER or PR, the most common form of the disease."

"This would improve the chances of survival for thousands of patients and bring us one step closer to our goal that by 2030 we will have identified what causes different tumours to grow and progress - enabling us to select the best treatment for every patient."

Provided by Keele University

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