CRT unveils 'screen test' for potential drugs to treat oestrogen positive breast cancer

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Cancer Research UK and its commercial arm, Cancer Research Technology have developed a unique test to discover molecules that could lead to potential new treatments for oestrogen receptor (ER)-positive breast cancer.

The team at Cancer Research UK's Cambridge Research Institute has unveiled a cell-based test that allows scientists to screen a library of 150,000 small drug-like molecules and identify those that switch off a cell signalling system called the FOXA1 pathway.

The team has previously shown that blocking the main protein in the pathway, FOXA1, blocks growth of ER-positive breast cancer cells, even in the presence of oestrogen receptors, which usually fuel the disease.

Current standard hormone treatments block the oestrogen receptor or the production of oestrogen. But sometimes patients stop responding to these drugs.

Resistant ER-positive breast tumours often rely on cell signals triggered by the oestrogen receptor to continue to fuel the disease.

The discovery of molecules that block the FOXA1 pathway, which prevents the oestrogen receptor driving the cancer, might provide new approaches to treat patients who are resistant to current approaches.

Dr Jason Carroll, group leader at Cancer Research UK's Cambridge Research Institute, said: "There's an urgent need to find new ways to treat breast cancer that is no longer responding to standard treatments, which work by targeting the effect of oestrogen in cancer cells.

"Our team has pinpointed the FOXA1 pathway, which we can target with new treatments to help combat this problem.

"We've designed a tailored test that identifies the molecules which switch off the pathway – and which we hope could one day be developed into a new class of drugs."

The team also discovered that blocking FOXA1 could prevent growth of molecular apocrine breast cancer cells. Women with this form of breast cancer have limited options for treatment and poor survival.

Dr Keith Blundy, CEO of Cancer Research Technology, said: "We're proud that the work of Cancer Research UK has already helped to transform breast cancer treatment, leading to significant improvements in survival.

"The FOXA1 pathway is an exciting new area of research and we hope that our cell-based screen will allow us to identify potential new targets for drug development this year.

"We'd be keen to collaborate with industry to screen their library, alongside ongoing research input from our team, to form an effective partnership with exciting opportunities."

Provided by Cancer Research UK

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