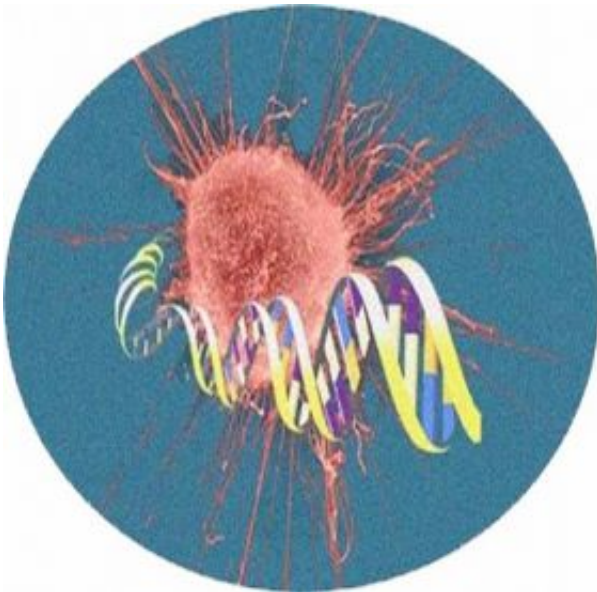


# Genes identified which predict response to breast cancer treatment

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One of the University of Aberdeen researchers, Dr Iain Brown, will today (Monday, Sept 24) describe the findings which relate to the drug docetaxel at the European Cancer Conference in Barcelona, which is expected to attract cancer experts from all over the world.

Docetaxel is one of the most effective chemotherapy treatments for advanced breast cancer, but it doesn't work for all.

Dr Brown, Postdoctoral Research Fellow, said: "Up to half of all patients treated with this drug will develop resistance and the treatment will fail."

The scientists hope their findings may ultimately help bring a step closer the development of more tailored treatment – as opposed to one therapy for all - for breast cancer sufferers.

Dr Brown and his University of Aberdeen colleague Dr Andy Schofield looked for a specific genetic make-up in breast cancer cells that do not respond to docetaxel, in the hope that this might explain why the cells became resistant to the drug.

They used a state-of-the-art technique that allowed them to simultaneously look at all known genes in our cells to identify those significantly associated with docetaxel resistance.

Dr Schofield, a Senior Lecturer at the University, said: "For the first time, we have found two genes that identify which breast cancer cells respond to chemotherapy and which do not respond.

"We hope that in the future this will mean that before we treat patients with breast cancer with docetaxel, we can predict whether the drug will work or not, using a very simple test."

Currently the scientists' findings relate to breast cancer cells grown in the laboratory. This is the first time the genetic pathways involved in resistance to docetaxel have been identified in breast cancer cells.

Now the researchers will investigate whether the genes they identified behave in the same way in patients.

Dr Brown said: "At the moment we have only tested this in breast cancer cells in the laboratory, but we do believe these results may be translated into the clinical setting and benefit the patient. In essence we have taken a clinical problem back to the laboratory, and now we intend to take this back to the bedside."

Dr Schofield added: "The ultimate aim is to develop individual treatments for breast cancer patients as opposed to a one size fits all approach. At the moment it is a bit of a lottery as some patients strike it lucky with their treatment. We want everyone to be a winner."

Dr Brown added: "If we find the same results in patient samples, we would expect that a simple test for predicting who would benefit from docetaxel could be developed and in clinical use within the next five years.

"Such a test would mean that those who would not benefit from docetaxel chemotherapy could be spared its harmful side effects, and this would also reduce costs for healthcare providers."

Dr Brown added: "We think that the changes we have found may also allow us to predict which patients would respond to other commonly used chemotherapy drugs, not just docetaxel.

"We are currently looking at these findings in other cancers, especially those which are also treated with docetaxel, to see if the results may have

a potential in other areas."

Source: University of Aberdeen

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