

New drug combo could make cancer more sensitive to chemo

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Combining chemotherapy with new drugs that target a protein that helps cancer cells to withstand chemotherapy could drastically improve treatment, according to research published in *Cancer Cell*.

Researchers at the University of Manchester carefully studied a network of proteins that kick into action when cancer cells in the lab are treated with a class of [chemotherapy](#) drugs called taxanes. These drugs are commonly used to treat several cancers - including breast, ovarian and [prostate cancers](#). But not all cancers respond to them, and it's difficult to predict which patients will benefit.

The Cancer Research UK-funded scientists measured the strength of this network in a range of cancers to try and find out why some are more likely to respond to taxane-based chemotherapy and why some are more likely to be resistant.

The team identified one particular component of this network - a protein called Bcl-xL - which helps the cancer cells survive treatment by blocking the self-destruct process that normally kills cells when treated with [chemotherapy drugs](#).

Drugs to block Bcl-xL are already available and, by combining them with taxanes, the researchers showed in the lab that the combination of treatments killed far more cancer cells than taxanes alone.

Study leader Professor Stephen Taylor, Cancer Research UK Senior Research Fellow and Leech Professor of Pharmacology at the University of Manchester, said: "This important research shows us there's potential to boost the cancer-fighting power of chemotherapy - and do more with less.

"This new combination could 'soften-up' [cancer cells](#), making it easier for chemotherapy to deliver the final blow and destroy the tumour. And the good news is that drugs targeting Bcl-xL are already out there and being tested in clinical trials.

"Using this combination of drugs could improve treatment for patients receiving taxanes and lower their chemotherapy dose, which would also help to reduce side-effects."

Dr Emma Smith, senior science information officer at Cancer Research UK, said: "Predicting which patients will benefit most from chemotherapy is essential if we're going to make cancer treatments more effective and kinder.

"In cases where chemotherapy doesn't seem to work straight away, we could add drugs that target Bcl-xL and hopefully see a real difference. It's still early days for this research but, if the results are confirmed in [clinical trials](#), it has the potential to improve treatment for thousands of cancer patients."

More information: Topham, C., et al, 'MYC is a major determinant of mitotic cell fate'. *Cancer Cell*, 2015.

Provided by Cancer Research UK

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