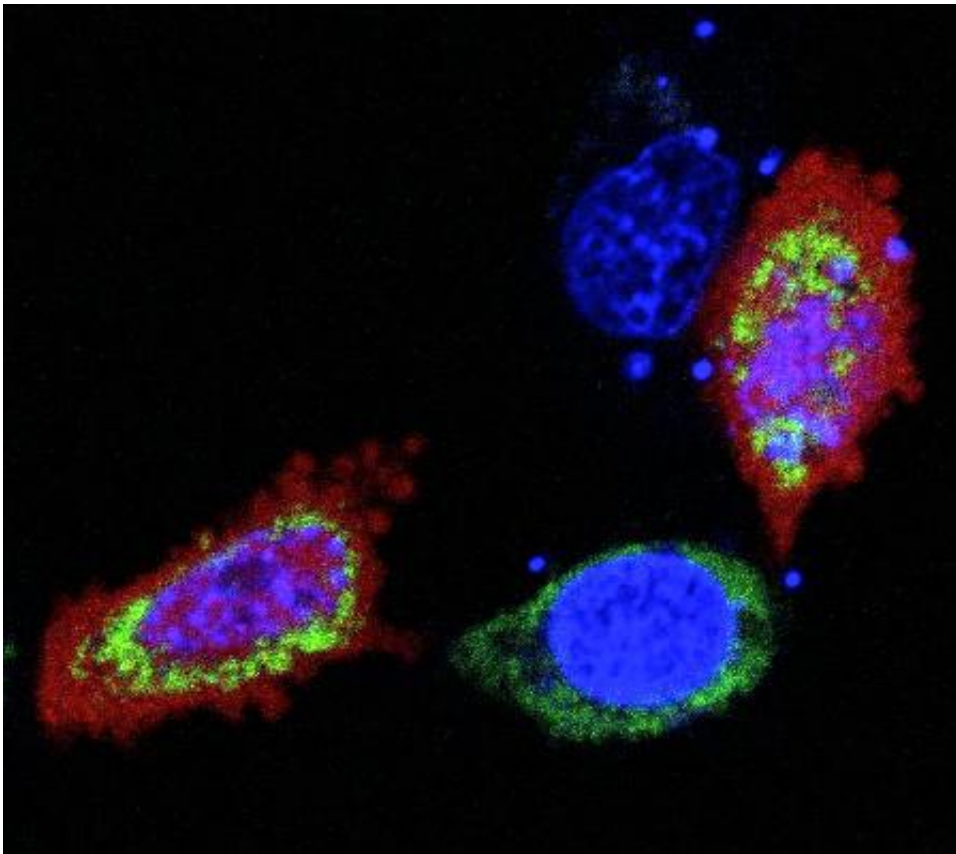


Researchers discover new way to screen for cancer-killing drugs

February 3 2016



A technique called "mito-priming" is the latest method to be developed by researchers in the fight against cancer.

Scientists at the University of Glasgow's Cancer Research UK Beatson

Institute have developed the technique as a research tool to understand how [cancer cells](#) die. The significant discovery, published today in *Nature Communications*, means Mito-priming can be applied to identify new [anti-cancer drugs](#) to screen their effectiveness.

In particular, BH3-mimetics are a very promising new class of cancer drugs developed to specifically kill [tumour cells](#). BH3 mimetics target a family of proteins called BCL-2 proteins, which function to keep cancer cells alive.

While not yet in use in clinical practice, BH3-mimetic anti-cancer drugs are showing great promise in late-stage clinical trials, particularly in the treatment of [chronic lymphocytic leukaemia](#) (CLL). Researchers at Glasgow's Institute of Cancer Sciences are hopeful their pioneering mito-priming method can be applied to screen for [new drugs](#) to target BCL-2 proteins and help find new ways to kill cancer cells.

The lead author of the paper, Dr Stephen Tait, said: "We have developed a new way to make any cell type sensitive to BH3-mimetic treatment. We term this method mito-priming.

"Mito-priming can be used to rapidly screen for new BH3-mimetics and other anti-cancer drugs, and should improve ways to kill cancer cells. It can also be used to rapidly define the potency and specificity of BH3-mimetics. Finally, the technique will allow us to understand how drug resistance occurs thereby allowing us to prevent this from happening in the first place.

"There is currently a lot of interest in targeting BCL2 proteins in the fight against cancer and there will be new therapies emerging in the future. We are hopeful our

new method of mito-priming can be used as a platform to discover new

drugs to target BCL-2 proteins."

The Scientists developed mito-priming by producing equal amounts of toxic and protective BCL-2 proteins in cells.

Dr Tait explained: "Cells in this state are very sensitive to inhibition of protective BCL-2 function by BH3-mimetics, such that they die within a few minutes of drug addiction."

More information: Jonathan Lopez et al. Mito-priming as a method to engineer Bcl-2 addiction, *Nature Communications* (2016). [DOI: 10.1038/ncomms10538](https://doi.org/10.1038/ncomms10538)

Provided by University of Glasgow

Citation: Researchers discover new way to screen for cancer-killing drugs (2016, February 3) retrieved 24 April 2024 from <https://medicalxpress.com/news/2016-02-screen-cancer-killing-drugs.html>

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