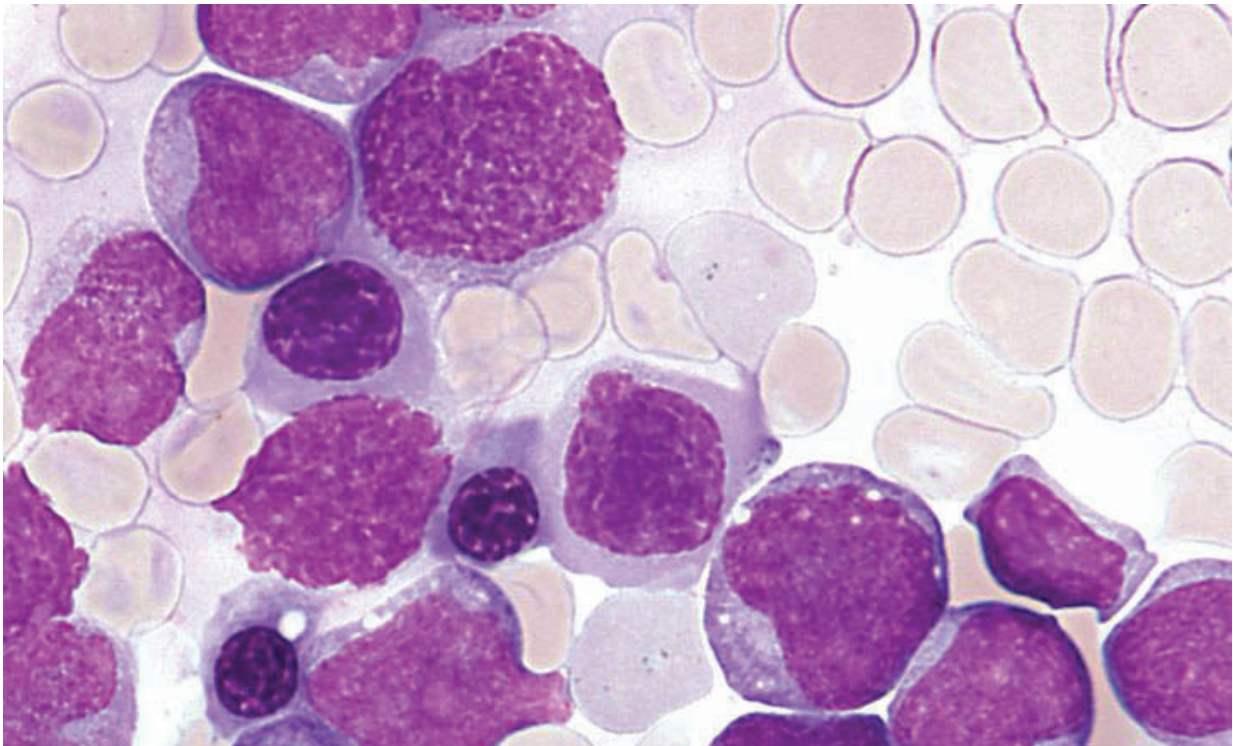


Scientists identify possible double drug combination to attack leukaemia

April 8 2016



Manchester scientists have identified a potential double drug combination against B-cell acute lymphoblastic leukaemia, according to a study published in the journal *Cell Death and Disease* today.

The scientists, from the Cancer Research UK Manchester Institute at

The University of Manchester, studied how two drugs called trametinib and ABT-263 work in cancer cells and mice.

Trametinib blocks the MEK/ERK signalling pathway to stop cancer cells from growing out of control. However, when the scientists studied B-cell [acute lymphoblastic leukaemia](#) cells in the laboratory trametinib did not work as well as expected and did not stop cells growing.

The scientists found that this was because these cancer cells had high levels of some proteins that help the cells to survive and overcome the effects of the drug.

They therefore decided to test if another drug known as ABT-263 – which targets the survival proteins – could work alongside trametinib to counteract this problem.

Their laboratory experiments in cell lines and mice showed that when they combined these drugs and blocked both signalling pathways, the cells could not escape the effects of trametinib and died.

There are 820 new cases of acute lymphoblastic leukaemia each year in the UK and B-cell acute lymphoblastic leukaemia is the most common type of the disease. More than half of these cases are diagnosed in children.

Professor Richard Marais, lead author and director of the Cancer Research UK Manchester Institute, said: "Cancer cells often outwit us by rewiring themselves, but this early research offers a promising idea to get ahead of them. We'll still need to do further research to prove that this is the case beyond cancer cells in the laboratory and it may take many years before we see it in the clinic, but it's the first step to finding a new effective [drug combination](#) for B-cell acute lymphoblastic leukaemia."

Dr Áine McCarthy, Cancer Research UK's science information officer, said: "This research uses our knowledge of the routes [cancer cells](#) use to stay alive to find a way to stop them in their tracks. These early steps are crucial for finding new ways to treat a cancer, but there is still much more work needed before we know for certain whether this will help patients."

More information: K Korfi et al. BIM mediates synergistic killing of B-cell acute lymphoblastic leukemia cells by BCL-2 and MEK inhibitors, *Cell Death and Disease* (2016). [DOI: 10.1038/cddis.2016.70](https://doi.org/10.1038/cddis.2016.70)

Provided by University of Manchester

Citation: Scientists identify possible double drug combination to attack leukaemia (2016, April 8) retrieved 25 April 2024 from <https://medicalxpress.com/news/2016-04-scientists-drug-combination-leukaemia.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.