

CCLG: The Children & Young People's Cancer Association research: Using an asthma medicine to harness the immune system and prevent childhood leukaemia from returning

Project title: Depleting leukaemic stem cells with repurposed immunotherapy to prevent relapse

Project stage: Starting soon (October 2026)

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Led by: Dr Sophie Kellaway, University of Nottingham



About the project

Acute myeloid leukaemia (AML) returning after treatment (also called relapsing) is challenging for doctors and heartbreaking for families. The leukaemia returns because some cancer cells can hide from treatment and then grow again when treatment stops. Aggressive chemotherapy is used to try to prevent leukaemia from coming back, but this causes life-long problems and still fails for one in five patients. Doctors need new treatments if they are to save more young lives.

Dr Sophie Kellaway's project looks at whether a repurposed asthma drug called Benralizumab could prevent childhood leukaemia from growing back. The drug is able to help immune cells find and fight asthma-causing cells with a marker called an Interleukin-5 receptor. Dr Kellaway's team at the University of Nottingham have found that these markers are also present on a subtype of AML. They think that the marker could be used to help the immune system find and kill relapse-causing cancer cells. This project will test whether the drug works on leukaemia samples from VIVO biobank. The team will look both at whether the drug leads to cancer cell death, and whether it would still work in patients whose immune systems have already been compromised by the cancer and its treatment.

The project will find out whether this drug can destroy the cells that cause relapse, once and for all. Together, this work will also show us if using the drug could work best at diagnosis, or when the child reaches remission and the immune system is more normal. Answering these questions is an essential step towards trialling the drug for patients fighting blood cancer. As Benralizumab is already in use for children with a certain type of asthma in the UK, this research could result in new treatments for patients much faster – bypassing many of the time-consuming steps needed to develop a new treatment.



The Children &
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CCLG and The Children & Young People's Cancer Association are operating names of The Children's Cancer and Leukaemia Group, registered charity in England and Wales (1182637) and Scotland (SC049948).