

CCLG: The Children & Young People's Cancer Association research: Developing new cancer treatment testing models for children with leukaemia

Project title: Advancing immunotherapy testing models for childhood acute myeloid leukaemia

Project stage: Just started (February 2026)

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Led by: Dr Katrina Lappin, Queen's University Belfast



About the project

Although treatments for acute myeloid leukaemia (AML) have improved, many children still face poor outcomes - especially if the cancer doesn't respond to initial treatment or comes back later. Treatments are also very harsh and cause long-term side effects, meaning new, more effective and less toxic options are needed. However, new treatments need to be tested in the lab before being given to patients, and this is difficult in childhood AML. There aren't many patient samples available to work with, and testing with mice can be expensive and inaccurate.

In this project, Dr Katrina Lappin and her team at Queen's University Belfast will create a low-cost research model of AML called a PDX-CAM model. This model will grow patients' AML cells (from the VIVO biobank) on blood vessel-rich membranes inside fertilised chicken eggs.

First, they will adjust the PDX-CAM model to find the best conditions for tumour growth, including looking at how many cancer cells to use and how best to support their growth. Once the model is working reliably, Dr Lappin's team will study how the model tumours respond to different treatments. They are particularly interested in whether currently available chemotherapies can be combined with treatments that help the immune system fight cancer.

This project will give researchers a new, powerful way to test treatments more quickly and with fewer resources. It will help us better understand which drug combinations are most likely to work in children with AML. By using less patient material and reducing reliance on animal testing, it also supports more ethical and efficient research practices. In the long term, this work could help bring safer and more effective treatments to children with AML, especially for those whose cancer is difficult to treat.



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).