



Discovering new therapies to eradicate cancer stem cells

Cancer type: Acute myeloid leukaemia

Lead researcher: Associate Professor Mark Dawson

Research team: Dr Marnie Blewitt, Dr Chris Burns

Project location: Peter MacCallum Cancer Centre and Walter and Eliza Hall Institute of Medical Research

Aims:

To grow and study large quantities of leukaemia stem cells (LSC) to determine where new drugs need to target.

What your support has made possible:

We have just completed the first set of experiments covering a third of the genes we hope to screen. We performed the screen on two separate occasions to account for technical variations that may confuse our findings and are pleased to report the results demonstrate the technical feasibility and quality of our strategy.

We are very excited by the fact that we have already made several promising findings.

The candidates we have identified appear to be in line with what we know are the major biological pathways that govern the survival of leukaemia stem cells. Importantly, we have also nearly completed building the tools to allow us to undertake the second stage of our screen. We have also made great progress on our second aim, which is to use an exciting new technology to deactivate a small segment of a protein whilst keeping the rest of the protein intact. This will allow us to assess precisely which part of the protein is vital for LSC survival and will guide our future drug development.

What are our plans for the second year?

Our team will begin the second stage of our screening, with the next third of genes, and continue our work in deactivating a small segment of a protein. We are only able to do this thanks to you.

What is your definition of success?

We hope that these exciting new discoveries lead to the development of drugs that will routinely be used in clinics around the world to combat these aggressive and often incurable diseases.

“We really hope to build on the work we have done this year in our aim to discover new therapies, and thanks to your support we’ll be able to do that.”



Photo: Peter MacCallum Cancer Centre.

