

Embargoed 07/03/2017



MEDIA RELEASE

New drugs in development to starve cancer cells

Revolutionary new cancer therapies for patients suffering with some of the most difficult-to-treat cancers are now being developed following a major discovery by scientists in the ACRF Centenary Cancer Research Centre based at the Centenary Institute, Sydney. These new and potentially game-changing drugs block metabolic processes critical to cancer cells and are currently in the early stages of development. Clinical trials will likely commence within three years thanks to a recent investment in this exciting new research.

Centenary's scientists are focused on new treatments for patients suffering with cancers associated with tragically low survival rates and for which limited treatment options are available. Having discovered new, ground-breaking links between cancer and its metabolism of nutrients, they have developed a novel method of starving cancer cells – but not normal cells – essentially cutting the energy supply to the diseased cell.

In the study led by Associate Professor Jeff Holst, Head of Origins of Cancer Program, Centenary Institute and Sydney University, the researchers discovered an important role for a protein involved in the metabolism of certain cancer cells that is vital for helping them survive and grow. "If we are able to specifically block the supply of nutrients to cancer cells by inhibiting the function of this protein, we can essentially 'starve' the cells and stop them from growing", Associate Professor Jeff Holst said. In collaboration with University of Sydney researchers, the team has also been able to identify molecules that block the action of the protein and these are now being developed as possible new drugs.

The new therapy will be developed by a privately held biotechnology company called *MetabloQ Pty Ltd* which is focused on translating the results of Associate Professor Holst's research into drugs for testing in clinical trials. *MetabloQ Pty Ltd* is funded by the *Medical Research Commercialisation Fund* (MRCF) and *UniSeed*, with additional investment from *CSIRO*. Dr Melissa McBurnie, Chair of *MetabloQ* and an investment manager with the MRCF said, "*MetabloQ* is a great example of a new company translating our nation's excellent scientific research into health and economic benefits for Australia." *MetabloQ*'s CEO and Research Director, Dr Chris Burns,

highlighted the importance collaboration has played in getting the company up and running “The initial scientific discovery upon which *MetabloQ* is founded would not have been possible without support for the basic research through the Centenary Institute, University of Sydney and NSW Ministry of Health”. Uniseed CEO Dr Peter Devine added, “We are excited to be investing in high-quality Australian medical research. The *MetabloQ* drugs have the potential to make a significant clinical impact on patients who currently have limited treatment options and a poor prognosis”.

This new therapy gives great hope to the lives of those Australians faced with mortality; patients such as Dr Rhys Thomas, an anaesthetist, who knew his situation was life-threatening when he was told he had stage three melanoma which had spread to his abdomen, lungs and brain. The husband and father of three endured many surgeries and a series of failed radiotherapy treatments before he participated in an unrelated clinical trial, as a last hope. Three years after being told he had just three months to live, Rhys has returned to work, and is enjoying this special time with his wife and children. “I find I now get much more joy out of just the little things in life than I ever used to”. But Rhys’s long term health is still uncertain. This exciting new research brings us closer to being able to offer a less invasive, safe option for patients such as Rhys, who are living with difficult-to-treat cancers.

The survival rates for many cancers has improved significantly over the past decade. The latest Australian Institute of Health and Welfare report card revealed, 68 per cent of Australians diagnosed with cancer, survive at least five years, a 20 per cent increase from the 1980’s. This is largely thanks to the development of new therapies. Cancer treatment is not ‘one size fits all’, so the more options available to patients with some of the deadliest cancers, the more time they will potentially be able to enjoy with their family. It is conceivable that the drugs produced by *MetabloQ* could help patients such as Rhys directly, giving his small children more time with their father “it really is the simple things, having coffee with my wife and reading to my kids.”

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