

Attacking and understanding the diet of tumours promises hope new hope for new therapies

14 Nov 2016 SYDNEY, NSW — A \$2.5M grant from Australian Cancer Research Foundation (ACRF) is being awarded to The Centenary Institute today to establish the new ACRF Tumour Metabolism Laboratory.

The grant is a continuation of support to help researchers better understand the way cancer cells metabolise dietary nutrients and provide critical information to the development of new cancer diagnostics and therapies.

Researchers will be focused on three fundamental and interlinked areas: nutrient uptake into tumours, sugar metabolism and fat metabolism. From this they hope to 'outsmart' the cancer cells that have evolved to the point where other forms of treatment have become ineffective.

"For years cancer researchers have focused on identifying specific changes in a patient's genes which have been associated with cancer formation and growth, and developing therapeutics to target these changes. While this information is still vital, it is becoming clear that many cancer cells are skilful at bypassing specific genetic changes and this makes many targeted therapies only briefly effective," says Professor Philip Hogg, Head of the ACRF–Centenary Cancer Research Centre.

This reality has led to a renewed focus on a fundamental property of cancer cells that was identified some time ago: their irregular metabolism of dietary nutrients.

"Technological advances and insights into how cancer develops have unleashed new opportunities for researchers to pioneer alternative approaches to treat cancer. This project is a shining example of ACRF's support of projects exploring new ways to beat cancer. We're excited at the potential it holds," says Professor Ian Brown, CEO Australian Cancer Research Foundation.

"The chief drivers of cancer, whether genetic or inflammatory, operate through altered metabolism, this this research has the potential of developing therapeutics applicable to a wide range of tumours", says Professor Mathew Vadas AO, Executive Director of the Centenary Institute.

In addition to funding from ACRF, the Cancer Institute NSW has committed to supporting Centenary Institute by providing funding for the scientists that will carry out the research.

Chief Cancer Officer and CEO of the Cancer Institute NSW, Professor David Currow, said, "The ACRF Tumour Metabolism Laboratory provides an opportunity to gain important new knowledge of changes at the molecular level of tumours. The Cancer Institute NSW is proud to be partnering with the Australian Cancer Research Foundation in this exciting new initiative. By supporting researchers working in the lab, we hope to accelerate these important discoveries."

Research at the ACRF Tumour Metabolism Laboratory will focus on the role of nutrient metabolism particularly in endometrial, brain and triple-negative breast tumours. These cancers are among the most difficult to treat of all cancers.

Endometrial cancer is diagnosed in more than 2,200 Australian women each year, accounts for 9.4% of all new cancer cases in women and has a 5-year survival rate of only 26%.

Glioblastoma is the most common and most malignant brain tumour and in terms of years of life lost is the highest of all the malignant cancers. It is associated with a 5-year survival rate of less than 5% and a median survival rate of less than 15 months.

Triple-negative breast cancer (TNBC) is an aggressive form of cancer that accounts for 10-15% of all breast cancer cases. TNBC lacks a targeted therapy, has an increased rate of recurrence, and a lower 5-year survival rate compared to other breast cancer subtypes.

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About the Australian Cancer Research Foundation

The Australian Cancer Research Foundation (ACRF) supports cutting-edge research in Australia for all types of cancer. It provides funding for infrastructure, technologies and equipment – resources that speed up discoveries in prevention, diagnosis and treatment of cancer. ACRF's Medical Research Advisory Committee is comprised of some of the most respected cancer scientists from Australia and overseas (including Professor Ian Frazer AC, co-creator of the cervical cancer vaccine), who assess and recommend applications for ACRF funding according to world-class standards. For more information on the Foundation, please visit www.acrf.com.au

About the Centenary Institute

The Centenary Institute is one of Australia's leading independent medical research institutes, located at the heart of the Royal Prince Alfred (Sydney's premier teaching Hospital) Hospital and University of Sydney precinct, with a key focus on three core areas of research – cancer, inflammation and cardiovascular diseases. Centenary's scientists possess 31 years of knowledge, expertise and technological skills in the area of its three core focus areas and strongly believes in the impact and power of collaboration and know that imparting knowledge amongst experts will achieve the fastest and best quality results. For more information on the Centenary Institute, please visit www.centenary.org.au