

# News Update

Autumn 2020

## COVID-19 at Centenary

More research will  
deliver the answers

In this unprecedented time, our thoughts go out to all and especially anyone affected personally by the COVID-19 virus that is sweeping and devastating the world.

At Centenary we have been looking at all of our research and everything we have learnt, seeing what we can do, alongside our peers, in this global fight against COVID-19.

Our world-leading medical research teams have already established their coronavirus lines of attack. Projects are being refined, regulatory approvals are in play and extensive planning and collaborations are starting to take place, notably with the University of Sydney, University of Technology Sydney and Sydney Local Health District.

This grouping will harness multi-disciplinary expertise and capabilities. Together with our unique laboratory and containment facilities we will be able to rapidly develop, test and trial new COVID-19 treatments.

COVID-19 will only be defeated by the collaborative efforts of medical research. Overcoming the coronavirus challenge and helping to save lives is an immediate priority here at the Centenary Institute.

We are looking forward to sharing our research endeavours in this area with you soon.

## New hope in the fight against melanoma

Scientists from our Melanoma Oncology and Immunology Program have reported a new strategy to battle melanoma, the most dangerous form of skin cancer, responsible for approximately 1,700 deaths in Australia each year.

Using drugs to inhibit two separate proteins, our researchers found that they could effectively kill melanoma cells by inducing apoptosis (the process of cellular self-destruction that takes place when a cell is no longer needed). With some patients unresponsive to targeted therapies or immunotherapy, this breakthrough gives hope to a new treatment strategy.

“Provoking apoptosis has proven extremely difficult due to the high expression of anti-apoptotic or ‘protector’ proteins found in melanoma cancer cells,” said lead author of the study, Dr Hsin-Yi Tseng, Research Officer at the Centenary Institute.

“These protector proteins help the melanoma cell to survive, thrive,

and in some cases to aid resistance against advanced medical drug treatments,” she said.

In the study, the researchers inhibited, in combination, the protein MCL1, together with proteins from the bromodomain and extra-terminal (BET) family. Both are known to have key roles in protecting and supporting melanoma cancer cells inside the body.

“Our research showed that combining BET and MCL1 inhibitors is highly effective at killing melanoma. The protective abilities of the BET and MCL1 proteins are decreased by the drug inhibitors and also induce the cancer cells to self-destruct,” said Dr Hsin-Yi Tseng.

Senior co-author on the study, Dr Jessamy Tiffen also from the Centenary Institute says the team’s research is highly significant and offers up a potential new treatment strategy for melanoma patients.

“Up to one half of melanoma patients do not respond to immunotherapy and a majority of patients tend to develop acquired resistance to targeted therapies. Our research examined a large number of human melanoma cell lines as well as use of mouse models.

“We saw extensive melanoma reduction in both cases which bodes well for the translation of this research into the next stage of development,” said Dr Tiffen.

## Consumer Engagement Program

Interested in becoming a Consumer advocate? It’s a great way to help our scientists communicate their research effectively to non-scientific audiences.

Find out more [www.centenary.org.au/consumer](http://www.centenary.org.au/consumer)

## Innovative cancer research recognised

Our world-leading cancer research has been recognised by Cancer Council NSW with funding awarded to three pioneering cancer research projects. Successful recipients and their research initiatives are

Professor Geoff McCaughan, Head of our Liver Injury and Cancer Program who will be investigating the use of combination drug therapies for treating liver cancer.

Professor John Rasko AO, Head of our Gene and Stem Cell Therapy Program who will be monitoring and predicting clinical response to immunotherapy against pancreatic cancer and asbestos induced lung cancer.

Dr Ulf Schmitz, Head of our Computational BioMedicine Laboratory (part of the Gene and Stem Cell Therapy Program) who will be investigating a regulatory process known as 'intron retention', in both breast cancer and leukaemia.

## Fast-tracking new drug development for diabetes

Head of our Lipid Metabolism and Neurochemistry Laboratory, Associate Professor Anthony Don, is one of the first recipients of Australian Government funding that will give him heavily subsidised access to advanced drug screening facilities at the National Drug Discovery Centre (NDDC).

Associate Professor Don is leading a project aimed at developing a new class of drugs targeting abnormal lipid (fat) metabolism to treat type 2 diabetes and obesity. The opportunity with the NDDC will help fast-track his research activity.



### PROFILE

## Dr Jessamy Tiffen inspiring the next generation

In celebration of International Women's Day, the Australian newspaper held a special panel discussion for senior girls at Pymble Ladies College, Sydney. On the panel was the Centenary Institute's Dr Jessamy Tiffen, a senior member of the Melanoma Oncology and Immunology Program.

The event focused on inspiring female students as to the amazing wealth of opportunities and options available to women in the workplace. Discussion covered the topics of women and education, leadership, potential discrimination and how to overcome it, as well as the importance of dreaming big for the future and setting achievable goals.

"It was absolutely fantastic to share my knowledge, issues I've experienced as a woman, as well to discuss my personal life and career journey to this group of incredibly interested students. There was genuine enthusiasm for what we were saying as panellists and some very insightful questions asked by these young women who are soon to embark on the next phase of their lives," said Dr Tiffen.

As a scientist at the Centenary Institute, Jessamy is focused on trying to better understand melanoma, a devastating disease responsible for more than 1,700 deaths each year in Australia. Jessamy seeks to understand why certain melanomas respond to treatment in some individuals while other melanomas do not.

"Melanoma is the most common form of cancer affecting young Australians which is extremely sad but which is also extremely motivating," she says. "Understanding the mechanics behind melanoma treatment resistance is essential to developing new drugs and finding new cures which will help save lives."

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