

Melanoma research at Mater

May 2021



Together we are helping to build a healthy community through investment in healthcare, education and research.

With your support, Mater is making incredible advances in melanoma research.

Identifying a new approach to immunotherapies

20 years ago, the average life expectancy for someone with advanced melanoma was six or seven months.

Today, more than half of people with advanced melanoma will live another year, and over a quarter will live more than 5 years.*

A large part of this success is down to the new immunotherapy drugs targeting melanoma, called immune checkpoint inhibitors.

Immune checkpoint inhibitors unleash the power of the immune system to identify and kill cancer cells, and so far, the results speak for themselves.

However, as a result of unleashing the immune response checkpoint inhibitors come with some serious side effects. This can cause inflammation in the bowel, lung, heart, skin and other organs.

Unfortunately, around half of the patients with advanced disease don't respond well, or at all, to immune checkpoint inhibitors.

Professor Gabrielli is tackling melanoma at the molecular level and investigating how to improve the effectiveness of immunotherapies.



“We are on the front wave that is likely to change how we understand and treat disease. Being part of this exciting progress, contributing new ideas, discoveries and hopefully treatments, makes the hard slog of everyday research worthwhile,”
Professor Gabrielli.

Over the past 2 years Professor Gabrielli and his Melanoma Research Group have demonstrated that CHK1 inhibitors promote an inflammatory response in melanomas. This improves the immune system's ability to detect and respond to the cancer.

The potential impacts of this research are huge. This drug combination triggers immune responses through a number of mechanisms but doesn't have extensive negative side-effects on the immune system, unlike immune checkpoint inhibitors.

The team are looking to develop a new combination of drugs and immunotherapies to spark a broad response to the cancer.

They have shown that the inflammatory response does trigger an immune response. Now the challenge is to determine why some tumours don't trigger a strong immune response.

Current results in the lab show a promising 20% of models are cured by the drug combination treatment. But this raises further questions. Professor Gabrielli and his team are using genetically identical models, and genetically identical tumours, yet only 20% of them are effectively cured by treatment.

There is something the cancer is doing that hides it from the immune system. But in some cases, this is not sufficiently to completely hide the tumour, resulting in a complete immune destruction of the tumour and long-term cure.

Professor Gabrielli and his team are now working to identify the mechanism the tumours use to hide themselves from the immune system. This will identify a new approach to immunotherapies. This may improve the effectiveness of the inflammatory response generated by CHK1 inhibitors and allow the patient's immune system to detect and control the cancer. Effectively, this would vaccinate the patient against their own tumour.

Professor Gabrielli has leveraged the vital support philanthropic of the community to secure competitive grant funding from the Melanoma Research Alliance, based in the United States.

*<https://ncci.canceraustralia.gov.au/outcomes/relative-survival-rate/relative-survival-stage-diagnosis-melanoma>



Research is the most important tool we have in the fight against some of the major challenges facing healthcare today. Your donations to Mater Foundation are funding incredible advances that can change lives.