



HRC funding recognises Malaghan Institute's cutting-edge health research

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The Malaghan Institute of Medical Research's pioneering allergy, asthma and cancer research programmes were recognised today with the award of over \$4 million of highly contested Health Research Council of New Zealand (HRC) funding.

The HRC is the Crown agency responsible for the management of the Government's investment in public good health research.

Up-and-coming Malaghan Institute scientist Dr Elizabeth Forbes was the recipient of a prestigious HRC Emerging Researcher First Grant. Dr Forbes will use her funding to develop a novel experimental model to investigate new strategies for the treatment and prevention of food allergy.

"With evidence indicating an increasing prevalence of food allergy in much of the Western world, it is now considered a very significant public health problem, particularly in children," said Dr Forbes. "The goal of my research is to establish a programme focused on understanding the immunological mechanisms that result in food-induced allergic reactions, ultimately improving the outcome, by reducing the limitations and suffering they impose on those who have them."

Allergy was also the focus of two other Malaghan Institute research projects to have received HRC funding.

The first of these, headed by Institute Director Prof Graham Le Gros, will explore the role of powerful chemical substances called cytokines, which are released by cells of the immune system, in driving allergic airway diseases such as asthma.

Prof Le Gros said that because of their ability to control immune responses, cytokines are considered an exciting new target for asthma therapies. "A keenly sought after therapeutic approach for the treatment of asthma is the identification and neutralisation of the cytokine that regulates the activation of the Th2 immune cells that give rise to the disease," he says.

An important outcome of this work will be the support of the preclinical development of drugs for the treatment of asthma and the identification of improved immunological markers for monitoring allergic airway disease.

Prof Franca Ronchese's HRC funded allergy research will address the role of a rare group of immune cells called dendritic cells, in stimulating allergic immune responses.

"Dendritic cells have a recognised role in the initiation of immune responses. They are known to provide important signals for the activation of inflammatory immune responses, but their role in driving allergy is less clear," she says.

"Identifying the signals that drive allergic responses may give us important clues on how these responses can be manipulated or prevented."

Prof Ronchese was also one of two Malaghan Institute Group Leaders to receive HRC funding to further the Malaghan Institute's world-class cancer immunotherapy research programme.



“Immunotherapy has huge possibility as a cancer therapy as it can be both powerful and specific, and destroy tumour cells with little damage to healthy tissue with consequent lower toxicity, fewer side effects and better quality of life for the patient,” said Prof Ronchese. “However its success as a therapy remains variable, being very successful in achieving lasting or complete responses in some patients, yet still remaining ineffective in the majority.”

Prof Ronchese hopes to remove some of this inconsistency by using her HRC funding to build-up a picture of what constitutes an effective cancer-fighting immune cell. Working alongside Dr Bill Jordan’s proteomic team from the Centre for Biodiscovery, Victoria University of Wellington, and Assoc Prof Rod Dunbar at the School of Biological Sciences in Auckland, Prof Ronchese will use a range of cutting-edge experimental strategies to determine the key molecular and cellular properties required of specialised immune cells called CD8+ T cells, in order for them to effectively target and eradicate cancer. This information will be critical for the development of cancer vaccines that generate effective anti-tumour immune responses.

Another key player in the Malaghan Institute Cancer Immunotherapy programme and recipient of HRC funding is Dr Ian Hermans, who heads the Institute’s cancer clinical trials.

“Cancer patients can be treated with vaccines comprised of purified dendritic cells,” said Dr Hermans. “The dendritic cells are first loaded with tumour tissue from the patient so that once injected, they can programme CD8+ T cells to recognise and eliminate cancer cells.”

“Because vaccine efficacy is currently variable in cancer patients, a better understanding of this process is needed to improve vaccine design.”

Dr Hermans and colleague Dr Troels Petersen have revealed a novel route for stimulating anti-tumour immune responses that exploits dendritic cells already resident in the cancer patient and will use their HRC funding to design vaccines to optimise this process. The outcome of this research will be vital for determining future vaccine design strategies used to treat cancer patients.

HRC funding of innovative research programmes such as those described above will ensure the continuing success of health research in this country.

The Malaghan Institute of Medical Research is New Zealand’s premier vaccine and immunology research centre and is based at Victoria University’s Kelburn campus, Wellington. The Institute operates independently and is a charitable trust. Researchers at the Malaghan Institute are focused on developing innovative ways to harness the strength and potency of the immune system, the body’s own natural defence against disease, to treat cancer, asthma, arthritis, multiple sclerosis and infectious disease.

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This media release is also available for viewing on our website www.malaghan.org.nz with links to relevant individuals and research groups.