



Marsden funding for Malaghan vaccine research

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Malaghan Institute of Medical Research cancer and infectious diseases scientists are the latest recipients of highly-contested Marsden Funds.

Dr Ian Hermans, Dr Troels Petersen and Dr Joanna Kirman were awarded ~\$800,000 of Marsden funding, administered by the Royal Society of New Zealand, for their three-year project entitled "*Towards better vaccines: investigating the role of langerin⁺ CD8 α ⁺ dendritic cells in innate and adaptive immunity*".

The goal of this research is to determine the role of immune cells called langerin⁺ CD8 α ⁺ dendritic cells in generating immune responses.

Dendritic cells are a specialised group of cells in our body that play a pivotal role in activating cells of the immune system, such as T cells, to limit the spread of pathogens.

"There are many different types of dendritic cells, each with different tasks to perform," said Dr Ian Hermans, Head of the Malaghan Institute's Vaccine Research Group. "We are interested in one specific subset of these cells because they appear to be particularly effective at stimulating T cell immune responses."

The particular dendritic cells that Dr Hermans and colleagues are interested in are located in the lymphoid system where they are strategically positioned to screen the blood for viruses or bacteria. Upon encountering a particular threat, the dendritic cells are then thought to migrate to the T cell area of the spleen to stimulate immune responses against the invading pathogens.

"We will use novel experimental models to examine the role of this specific subset of dendritic cells in generating immunity to invading blood-borne pathogens and blood-borne tumours," said Dr Hermans. "We will also work with geneticists to gather more information about these cells to facilitate the design of more effective vaccines."



Malaghan Institute Infectious Diseases specialist Dr Joanna Kirman adds “We are using the Tuberculosis vaccine, BCG, to mimic a systemic bacterial infection. However, the information we gain from this study will extend beyond improving the poorly protective Tuberculosis vaccine as it could facilitate vaccine design for many other blood-borne bacterial infections.”

“This research may provide evidence that targeting langerin⁺ CD8 α ⁺ dendritic cells specifically, could improve the efficacy of anti-bacterial vaccines and anti-cancer vaccines.”

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