

Top young scientist honoured at MacDiarmid Awards

A childhood promise to find a cure for cancer has led a PhD student to a top honour at the MacDiarmid Young Scientists of the Year Awards.

Dianne Sika-Paotonu won the HRC-sponsored Advancing Human Health and Wellbeing category for her research to devise improved cancer vaccines. Her work has been inspired by a pledge she made as an eight-year-old to find a breakthrough in cancer treatment after a close family friend died of the disease.

Dianne, who is based at the Malaghan Institute of Medical Research in Wellington, is researching potent new vaccines that may be able to activate a patient's immune cells to destroy cancer tissue.

She received her \$5,000 prize at a glittering award ceremony at Sky City, in Auckland.

Dianne, whose parents are Tongan, is researching potent new vaccines that may be able to activate a patient's immune cells to destroy cancer tissue.

"I am absolutely delighted to win this award," she said. "As a scientist you can easily spend 12 or 15 hours a day working in the lab but sometimes this can make you feel rather isolated and wondering whether or not anyone has noticed the effort."

"You yourself know how important your work is, but to have other people recognise and appreciate your work in this way really does make receiving this MacDiarmid award truly unique."

Dianne's PhD research is supported by a HRC Pacific Health PhD Scholarship.

Her work in the Malaghan Institute Vaccine Research Group, led by Dr Ian Hermans, is focused on a rare group of immune cells called dendritic cells. These cells have the unique ability of being able to stimulate the immune system to launch an attack against cancerous tissue.

Dianne's breakthrough strategies involve coating the dendritic cells with a sea sponge extract (alpha-galactosylceramide) which causes the dendritic cells to work harder at turning the T-cells into cancer killers.

By developing strategies that maximise dendritic cell activity, Dianne is one step closer towards a highly-effective more natural approach to cancer therapy that doesn't come with the side-effects of conventional treatments.

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Dianne Sika-Paotonu

Key words:

- Cancer vaccines, immune cells, dendritic cells, sea sponge extract, T-cells

Key facts:

- Dendritic cells, a rare group of immune cells that have the unique ability to stimulate the immune system to launch an attack against cancerous tissue
- This research strategy has the potential to be a highly-effective more natural approach to cancer therapy without the side-effects of conventional treatments

Aims of this research:

- To identify potent new vaccines that will activate a patient's immune cells to destroy cancer tissue
- To maximise dendritic cell activity through a strategy involving coating the cells with a sea sponge extract, resulting in the dendritic cells working harder at turning the T-cells into cancer killers