

MARSDEN FUND TE PŪTEA RANGAHAU A MARSDEN

Live or Let Die: Importance of Cell Death for Tumour Prevention

Within our own bodies, there is a molecular guardian that watches out for damage and disorder in our cells. This guardian has a very unassuming name, p53, but a very powerful role. It is the most important molecule in cancer prevention, and is faulty in most human tumours.

Many scientists are now trying to create cancer therapies that treat faulty p53, but to do this it is necessary to know exactly how p53 works. A team of researchers from the School of Medicine at the University of Otago, led by Professor Antony Braithwaite, has been awarded a Marsden grant to find out exactly how p53 stops cancer cells from forming.

It is known that p53 can tackle damaged cells in two ways; either by killing them or by resting them long enough to repair the damage. Which of these two roles is the most important for cancer prevention? The answer to this question is not known, but Professor Braithwaite and his team aim to find out.

The group has designed a form of p53 that has the ability to rest cells but that is defective in inducing cell death. If this particular form of p53 cannot prevent tumours forming, then this will show that the essential function of p53 in cancer prevention is its ability to destroy faulty cells.

This knowledge will increase understanding of how p53 works and will facilitate the development of therapies to treat cancer.

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