Canterbury Medical Research Foundation

Final report for Project Grant 2017PROMartina-Paumann-Page

Grant recipient

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Grant details

GRANT TYPE	Project Grant	FUNDING ROUND	2017 Major Project Grant
GRANT REFERENCE	2017PROMartina-Paumann-Page	GRANT AMOUNT	$95,509

Final report

1. Report for the Scientific Assessing Committee

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scientific final progress report 24 months Jan 2020.pdf
299.6 KiB

2. Brief summary

The aim of this project was to develop two novel assays to investigate the role of peroxidasin in health and disease. Peroxidasin is expressed in most tissues of the body and is essential for the stability and integrity of connective tissue. However, peroxidasin was also shown to be a key player in numerous pathologies like tissue fibrosis and several types of cancer. Interestingly, recent research has revealed that peroxidasin mRNA is highly upregulated when metastatic melanoma cells become invasive. This implies that peroxidasin promotes tumour cell invasion. However, to date the underlying molecular mechanisms remain unknown.

Sensitive and reliable assays are required to elucidate the role of peroxidasin in tumour biology. During this project, we have developed two independent assays to measure peroxidasin protein expression and enzymatic activity in melanoma cell lysates (an ELISA: enzyme-linked immunosorbent assay; and a mass spectrometry method). The results obtained with our novel assays have revealed that peroxidasin protein expression is associated with the invasive potential of melanoma cells.

Furthermore, we have developed a fluorescence microscopy method to visualize peroxidasin protein in melanoma cells. Our novel assays and results will be published in a high impact scientific journal, thereby we are making our assays and findings available to the wider scientific community. Most importantly though, we will use these novel assays to investigate peroxidasin expression and activity in tumour tissue samples. This will help to elucidate if peroxidasin could be a useful biomarker with diagnostic, prognostic and potentially therapeutic value.

3. Photographs

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CMRF photo 2.jpg
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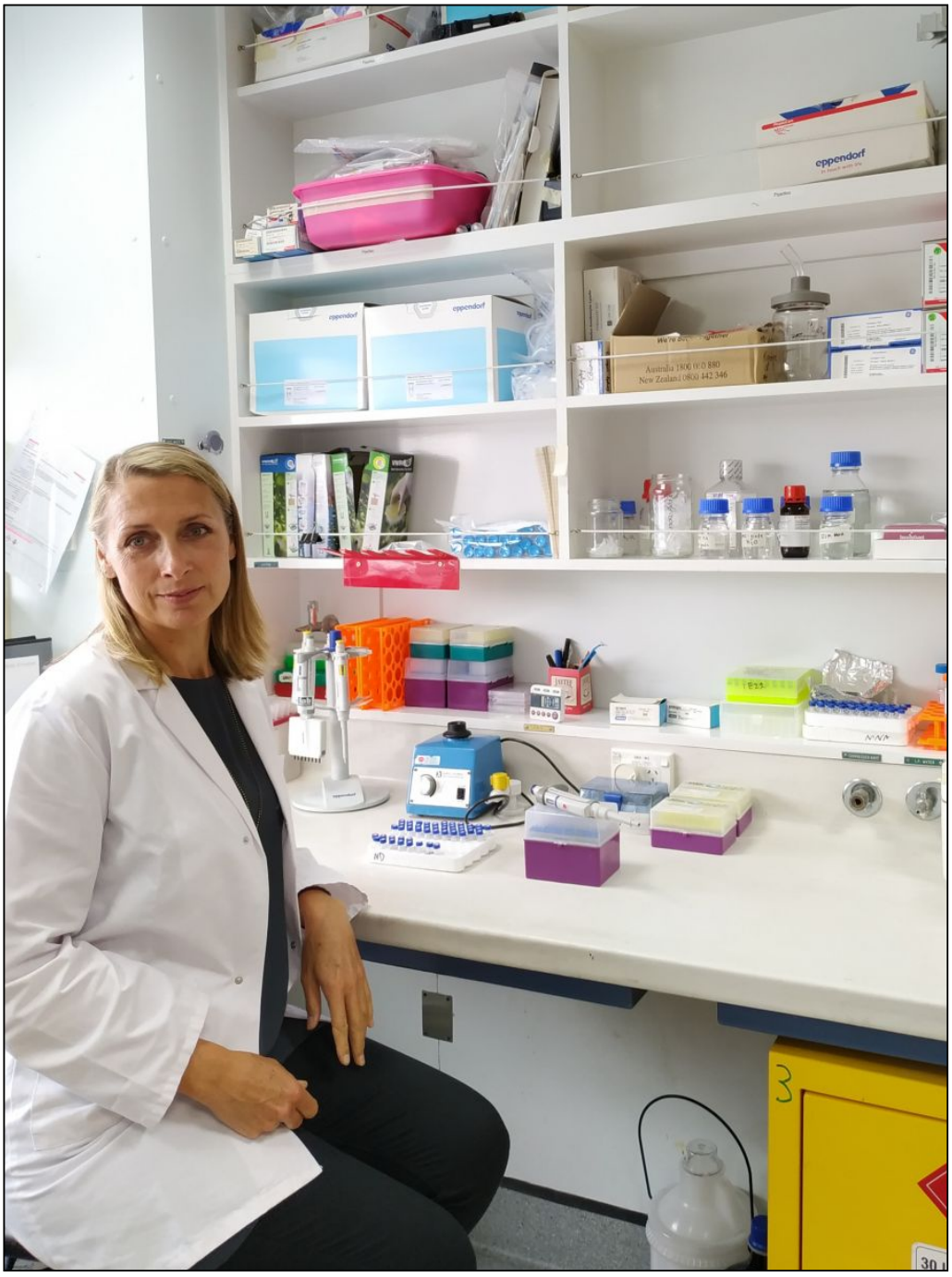

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5. Feedback

I am very grateful for having received this funding from CMRF. Preliminary data generated with the novel assays we have developed during this project contributed to a successful Marsden Grant application to investigate the molecular mechanisms of peroxidasin promoting melanoma cell invasion. We will be able to use the assays to investigate a wide range of research questions and establish the implications of peroxidasin expression in other types of cancer.

Publication

Date

30/09/2020