Name of Institution: University of Melbourne

Project Title: *Utilising a novel predictor to stratify patients with therapy-resistant Pancreatic Cancer for treatment with CHK inhibitor drugs to improve responses and outcomes*

Principal Investigator: Dr Petranel Ferrao

Grant: Round 2 Innovation Grant 2016

Background:

Pancreatic Cancer patients have very low survival rates and desperately need new therapies to improve outcomes. Dr Petranel Ferrao and her team have identified a marker that may be useful for identifying some cancers that are responsive to new targeted CHK inhibitor drugs. They utilised Pancreatic Cancer laboratory models and patient samples to validate this marker, so that it can be used to select Pancreatic Cancer patients who will benefit from these drugs to enhance treatment responses, improve outcomes and in-turn increase patient survival rates.

The Research:

This grant allowed Dr Ferrao and her team to determine if their novel biomarker could be utilised as a predictor for selecting patients who are most likely to benefit from combination treatment with CHK inhibitors. It also allowed them to validate the biomarker as a prognostic indicator of treatment response.

Using a Pancreatic Cancer cell line panel, they assessed for response to the main chemotherapeutic drug used in treatment and clinical candidate targeted CHK inhibitor drugs. Dr Ferrao and her team then performed a correlation analysis of the levels of the biomarker and drug response.

The results suggest that the novel biomarker could be beneficial in identifying Pancreatic Cancers that are able to be sensitised to treatment with CHK inhibitors as combination therapy.

The data also confirmed the correlation of high levels of the biomarker with inherent resistance to treatment.

The Findings:

The research findings confirmed the team's hypothesis- that the biomarker could be beneficial for identifying Pancreatic Cancers resistant to current treatments, which can be sensitised by combination with CHK inhibitors.

The data supports further assessment of the novel biomarker in preclinical models to advance the clinical evaluation of the biomarker in patients.

Advancement of this research could provide an effective combination treatment option for Pancreatic Cancers with high levels of the biomarker. This has the potential to improve outcomes, particularly in patients who are most resistant to some of the current standard-of-care treatments.

To progress this work and validate the findings, the project will be extended to additional models for the proof-of-concept data required to translate the potential use of this novel biomarker into clinical evaluation in patients.

As a result of this Project funded by the Avner Pancreatic Cancer Foundation, Dr Petranel Ferrao has presented findings at:

a) The Personalised and Precision Medicine International Conference 2018
b) 25th Biennial Congress of the European Association for Cancer Research