

Project Title: Understanding and targeting metabolic regulators of cancer cell proliferation and cell death

Grant Awarded: \$60,000

Principal Investigator: Dr Anneke Blackburn, John Curtin School of Medical Research, The Australian National University

Cancer cells have a different metabolic program to normal cells. Dichloroacetate (DCA) has been proposed as a new and non-toxic anti-cancer agent that targets this metabolic difference. Our laboratory has previously shown the ability of DCA to inhibit the growth of metastatic breast cancer in vitro and in animals, reducing the ability of cancer cells to grow and resist cell death. The CCACT funded project will extend our studies on DCA into multiple myeloma, a new cancer type for us, but one that is in great need of new treatment options.

The project aims to examine the effectiveness of DCA against multiple myeloma cell lines, and also primary myeloma cells collected from patients, alone or in combination with standard myeloma treatments, to determine if DCA is an appropriate treatment to use against myeloma, and to identify features of the myeloma cells that can tell us if a patient's cancer is likely to respond to this drug.

These experiments will be performed in parallel with an investigator-initiated clinical trial currently due to commence at the end of 2014 of DCA in multiple myeloma patients at The Canberra Hospital (in collaboration with Dr D'Rozario of the Haematology Department, funded by the Canberra Hospital Private Practice Trust Fund), thus the results of this grant will be directly translated into clinical practice in a way that could benefit cancer patients in the ACT.