Cancer Council ACT

Progress report form
Cancer Council ACT Research Grant

Please submit electronically to cancer.information@actcancer.org

Report due date	12 December 2023	
Project Lay Title	Testing GSTO1 inhibitors as anti-cancer therapeutics	
Grant Amount	$75,000	
Chief Investigator	Emeritus Professor Philip Board, JCSMR, ANU	
Project dates	Start: 1 July 2023	End:

Project Aims/Objectives Briefly state the aims from your original application.	There is now considerable evidence that an enzyme called glutathione transferase omega 1 (GSTO1) contributes to cancer growth and its spread to multiple areas in the body. In the case of breast cancer, GSTO1 protects breast cancer stem cells from conventional chemotherapy, and this allows the cancer to start again. We have developed to new drugs that block the activity of GSTO1 and this study will determine if they can potentially be used in cancer chemotherapy.
Please describe how the project is progressing against the aims. Word limit is approximately 400 words.	The start of the research program and related expenditure was delayed because the staff member was completing work on another project and had to take extended sick leave. However, we have obtained the MDA-MB-231 (breast), HCT116 (colon), MCF10A (control breast) cell lines and established suitable cell culture conditions. We are currently awaiting the arrival of the U87-MG glioblastoma cell line from an overseas supplier. We have also obtained fresh supplies of several GSTO1 inhibitors that we have previously developed in collaboration with colleagues at Monash Institute of Pharmaceutical Sciences. In addition, we have recently completed a new screen of over one billion small molecules and the MIPS team is currently resynthesizing the most likely GSTO1 inhibitor candidates. Our preliminary results are very encouraging and show that GSTO1 inhibitors are cytotoxic to HCT116 and MDA-MB-231 cells, and they also decrease the clonogenicity of these cell lines. Our ongoing studies will accurately quantify the action of these inhibitors in comparison with their effects on non-cancerous cells.

Moderating Issues Please describe any challenges that you are currently facing and/or that may have impacted upon intended activity, progress and outcomes. Please explain how you will mitigate against these circumstances. Word limit is approximately 300 words.	See above

Publications and presentations Please list any publications and/or abstracts produced as a result of the project. Include manuscripts in preparation or in submission/under review.	No publications at this stage

Other Comments Please outline any other items of general interest which have arisen as a result of the project.	

Signed Chief Investigator	
Date	12/12/23