Cancer Council Western Australia
Research Project Grant

Cancer Council WA

Project Title	Establishing the potential of monocyte chemotactic protein-1 as a novel treatment for mesothelioma and pleural effusion
Recipient	Dr Sally Lansley
Institution	The University of Western Australia
Research description	Mesothelioma kills one person every 12 hours in Australia. We have one of the world's highest rates of mesothelioma due to the past mining and exportation of crocidolite (the most carcinogenic type of asbestos). This is of particular relevance to Western Australia due to previous extensive asbestos mining operations in Wittenoom. This frequency will also continue to rise due to individuals becoming exposed to asbestos through home renovation and DIY projects. Mesothelioma has no cure: Attempts with common anti-cancer treatments, alone or in combination, have failed. With a survival rate of less than 12 months following diagnosis, there is an urgent need to find new therapies. The majority of mesothelioma patients (>90%) will also develop an accumulation of fluid within the chest (malignant pleural effusion) during their disease course. Malignant pleural effusion is a serious condition resulting in severe patient discomfort, breathlessness and poor quality of life. Malignant pleural effusion is currently managed by attempts to remove the fluid, which is suboptimal and effusions will commonly return. Understanding the mechanism/s of mesothelioma and effusion development is therefore essential to improving patient care and outcomes. The team have identified a molecule (MCP-1) that drives effusion formation and when MCP-1 is removed from the local environment the effusion volume and tumour size significantly decrease. This study aims to uncover the mechanisms by which MCP-1 drives effusion formation and mesothelioma tumour growth in order to develop targeted therapies. The research team will trial drugs that block MCP-1 (or its receptor) that have been shown to work in our mouse mesothelioma models and are currently being tested in human trials for other cancers. The potential overall benefits of this research are (A) to understand how MCP-1 promotes mesothelioma tumour growth and malignant pleural effusion formation and B) whether the use of anti-MCP-1 drugs results in better patient outcomes (decreased tumour burden, decreased pleural effusion volume and quality of life), including long term responses. This will potentially lead to the development of a new treatment for people with mesothelioma and malignant pleural effusion.
Funding from CCWA	$95,738
Fully supported	Through an anonymous estate