

RESEARCH DIRECTIONS

The link between inflammation and cancer development

Dr Tara Roberts from the School of Medicine has been awarded a grant from the Cancer Institute of NSW to research the link between chronic inflammation and the development of cancer.

'The role of inflammation is a relatively new area for cancer research, but it's of increasing interest due to the possibility that discoveries in this space may radically change treatment policies' says Dr Roberts. 'Cancer accounts for 29% of deaths in Australia and the protein SMG1 has recently been identified as a tumour suppressor. Lower levels of this protein can alter inflammation and induce stress related changes to cells which have been found to lead to cancer development in animals. So understanding the mechanisms by which SMG1 can regulate chronic inflammation and stress signalling pathways can contribute to our understanding of cancer development, progression and cell survival.' This project aims to examine the mechanism by which SMG1 deficiency increases the susceptibility to cancer development by understanding the pathways it regulates and how these roles relate to cancer development.

The research will address the problem from a range of directions. A combination of biochemistry and molecular investigations will take place by isolating the SMG1 deficient cells from bone marrow to examine which pathways are regulated by SMG1. In parallel human lymphoma and leukaemia samples will be studied to determine whether the levels of SMG1 protein and the closely related protein, ATM, can predict how patients' will respond to different cancer therapies.



People predisposed to chronic inflammation have a higher risk of developing cancer. This research into understanding the inflammatory pathways SMG1 regulates may lead to new treatment strategies and their success.

Project Title: Understanding the role of SMG1 as a tumour suppressor

Funding has been set at: \$1,225,257

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