Media release
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FECRI research discover rogue immune cells in step closer to new Bowel cancer treatment.

- *Research from the Fiona Elsey Cancer Research Institute has identified rogue immune cells, establishing potential new targets in treatment of Bowel cancer.*
- *Bowel cancer is the second largest cancer killer in Australia and the most diagnosed cancer in Western Victoria.*
- *'' Chronically stimulated human MAIT cells are unexpectedly potent IL-13 producers"* ***Jason Kelly****,* ***Yosuke Minoda****,* ***Tobias Meredith****, Garth Cameron, Marie-Sophie Philipp, Daniel G Pellicci, Alexandra J Corbett, Christian Kurts, Daniel HD Gray, Dale I Godfrey,* ***George Kannourakis & Stuart P Berzins****. Journal: Immunology & Cell Biology 2019 Published: July 2019*

Bowel cancer research conducted at the Fiona Elsey Cancer Research Institute in Ballarat, has discovered that a subset of immune cells in the bowel can misbehave and release chemical messengers that promote bowel cancer and inhibit other immune cells.

Australia has one of the highest rates of Bowel cancer in the world. It is the third most diagnosed form of cancer in Australia and the second largest killer. Regular screening and early detection are key with a 98% successful rate, when detected early. But new treatments are needed for more advanced disease. Bowel cancer outcomes in Western Victorian are poor with a 4% higher mortality rate than the Victorian average.

Most Bowel cancers start as benign, non-threatening growths – called polyps – on the wall or lining of the bowel.

FECRI researchers have discovered that immune cells in the walls of the bowel can misbehave and release chemical messengers that promote Bowel cancer. The cells (called 'MAIT' cells) are typically helpful for fighting normal bacterial infections in the gut but the Ballarat team found that long term stimulation caused the immune cells to release a chemical message. This message triggering the growth and spread of the cancer, while suppressing nearby anti-cancer immune responses.

The research has been conducted as part of the Institutes collaborative program with researchers from the University of Melbourne. The breakthrough has been recognised as an outstanding observation in international journal*, Immunology & Cell Biology*.

Professor Stuart Berzins from the Institute, said " …the study has been well received at national and international conferences and in our next stage we will be working collaboratively with researchers at the University of Melbourne to develop new treatment strategies that specifically target these misbehaving cells."

Professor George Kannourakis said “This publication is a great example of the ground-breaking work that the team here at the Institute is doing into the immunology of cancer. It demonstrates the close relationship with clinicians and our researchers, to achieve translational outcomes for patients. It is only through research such as this that we can improve the outcomes for patients with advanced bowel cancer. Our program is building great momentum and will continue to produce outcomes.”

FECRI currently has 10 PhD students from Federation University and 10 senior scientific staff. The program is community funded and the only cancer research Institute in regional Australia. Recent achievements of FECRI have included:

- Identification of potential new immunotherapy targets for ovarian cancer
- Identification of a new immune cell subset in histiocytic disorders.
- Further immune studies in various cancer and leukaemias.
- Identification of a new method for isolating new viruses.

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