

**Media release**

**Friday 9 December 2022**

**FECRI new work into aggressive breast cancer.**

- Researchers at the Fiona Elsey Cancer Research Institute have published results examining the aggressive subtype triple-negative breast cancer.
- Breast cancer is one of the most common cancers in women with 20,000 new cases diagnosed in Australia each year. It is the second most common cause of cancer related deaths in women with over 3,100 deaths per year.

FECRI research team, Dr Arpita Poddar, Dr Prashanth Prithviraj, Professor George Kannourakis and Dr Aparna Jayachandran have recently published research into Triple Negative Breast cancer (TNBC).

The paper titled “Crosstalk between immune checkpoint modulators, metabolic reprogramming, and cellular plasticity in Triple-Negative Breast Cancer” was published in international publication Current Oncology.

One million cases of breast cancer diagnosed around the world each year, 15-20% are TNBCs. TNBC is more aggressive than other breast cancer subtypes. TNBC patients have a median survival of <14 months once cancer has spread. TNBC has limited treatment options and leads to significantly lower survival rates.

The group have reviewed the interplay of tumour characteristic factors causing immune-checkpoint-inhibitor based immunotherapy to fail in TNBC. The paper reports the relevance of crosstalk between various cellular features on the outcomes of immunotherapy and highlight the need for combination treatments. Through detailed understanding of the biological backdrop, patient outcomes will be significantly improved.

This is nanoparticle specialist, Dr Poddar’s first publication at the Institute, since joining the research group in mid-2022. Dr Arpita Poddar has a PhD in the application of nanoparticles in cancer treatment at RMIT University and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). She has worked with NHMRC clinical trials at the University of Sydney, Graz University of Technology, Austria, the ALBA Synchrotron, Barcelona and the Elettra Sincrotrone, Italy, developing nanotech non-viral alternatives to target prostate cancer cells for gene therapy. Dr Poddar’s brings vital nanotech understanding and skills to the FECRI team.

The research follows the Breast cancer groups world first work in describing the behaviour and function of a pregnancy associated plasma protein (PAPPA), in triple negative breast cancer. This research has led to understanding the mechanism for progression of cancer during pregnancy.

Head of the FECRI Breast cancer group, Dr Aparna said on “This works sets a future research path for the development of new and improved diagnostic and therapeutic options for TNBC patients.”

Institute Director of FECRI, Professor George Kannourakis stated, “This publication is a great example of the relevant and ground-breaking work that the team here at the Institute are doing into the immunology of cancer. Our program is building great momentum and will continue to produce outcomes.”

This research is community funded, with support of donations and events such as the upcoming Ballarat Cycle Classic and the recently held Brunch for Breasts.

The Institute currently has 3 PhD students and 17 staff with key projects in: Immunology, Breast cancer, Bowel cancer, Ovarian cancer, Chronic lymphocytic leukaemia, Renal cancer, Langerhans cell histiocytosis and Brain tumours.

Recent additional research results include:

- Identification of proteins involved in chemo resistance in Ovarian cancer that can potentially be used as targets to prevent progression and circumvent chemoresistance in patients.
- World first work in describing the behaviour and function of a pregnancy associated plasma protein (PAPPA), in triple negative breast cancer. This research has led to understanding the mechanism for progression of cancer during pregnancy.
- Bowel cancer research team reported discovery on a subset of immune cells in the bowel that can misbehave and release chemical messengers that promote cancer and inhibit other immune cells.
- Identification of a new immune cell subset in histiocytic disorders.

***A video animation summary of the paper available via [YouTube](#)***

**Photo Opportunity**

A photo opportunity with the research group will be available at the Institute as below:

*Friday 9 December, 10: 30am*

*Fiona Elsey Cancer Research Institute*

*Suite 23, 106 -110 Lydiard Street South*

*Ballarat*

***All media enquiries, please contact Sarah Stapleton - Marketing and Fundraising Manager at FECRI on 0475 383 687 or [sarah@fecri.org.au](mailto:sarah@fecri.org.au).***

***Please tag the Institute on all social media using [@fionaelseycr](#)***