

Media release

Friday 3 May 2024

New finding from Breast cancer group.

Ballarat based, Fiona Elsey Cancer Research Institute, Breast cancer research group have published new findings on a protein associated with high-risk triple-negative breast cancer (TNBC) in the Journal of Biomedical Science. It is hoped this work will lead to a pathway for developing new and improved diagnostic and treatment options for patients with this disease.

Breast cancer is one of the most common cancers in women with over 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.

Triple-negative breast cancers account for 10 - 20% of breast cancers and have been reported to be more aggressive. Notably, the triple-negative subtype is encountered more often in pregnancy and has an aggressive clinical course, with limited treatment options.

A protein known as ‘Pregnancy associated plasma protein-A (PAPP-A)’ is important in development and progression of this disease, but its function in this cancer is not well understood. A clearer understanding is thus critical for developing better treatment.

The research group have found and published new research into the PAPP-A in the context of cancer development, progression, metastasis, impact of pregnancy and its role in acting as a biomarker. It has been found that PAPP-A is relevant as a clinical marker and its association with the immune system. Through the increased understanding of this biological mechanism, the group are working on a pathway for developing new and improved diagnostic and treatment options for patients with this disease.

Quote attributable to Post Doctoral Research Fellow, Fiona Elsey Cancer Research Institute, Dr Arpita Poddar.

“TNBC, which is one of the most aggressive types of breast cancer, has elevated levels of PAPP-A. Unfortunately, TNBC is more common in pregnancy, has poor clinical outcomes and limited treatment options. Our team has strengthened the understanding of how PAPP-A works in TNBC development, the impact of the immune system, how it is involved in cancer growth and its link to pregnancy. This paves the way for new targeted therapies for patients”.

Quote attributable to Honorary Director for the Fiona Elsey Cancer Research Institute, Professor George Kannourakis.

“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.”

“As a community funded organisation, the Institute relies on the generous support of donors to continue and grow. We are proud to be Australia’s only regionally based cancer research facility, based in Ballarat. We are an example that internationally recognised research can be performed outside of the metropolitan centres.”

Recent research results from FECRI 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.

Photo opportunity:

Friday 3 May, 11:00am
Fiona Elsey Cancer Research Institute
106-110 Lydiard Street (Sth), Ballarat.

In attendance: Breast cancer research group from the Fiona Elsey Cancer Research Institute- Dr Arpita Poddar, Professor George Kannourakis and Dr Aparna Jayachandran

Media Enquires:

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Publication:

[The role of pregnancy associated plasma protein-A in triple negative breast cancer: a promising target for achieving clinical benefits.](#)

Dr Arpita Poddar, Dr Farah Ahmady, Dr Sushma R. Rao, Dr Revati Sharma, Prof George Kannourakis, Assoc. Prof Prashanth Prithviraj, and Dr Aparna Jayachandran. **Journal of Biomedical Science**. Feb 2024