Researchers find new breast cancer treatment target

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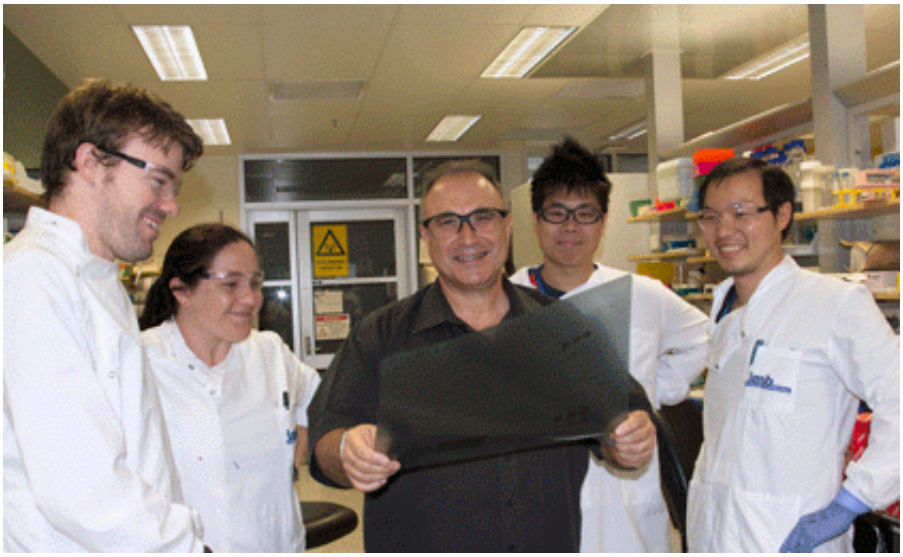

IMB's Professor George Muscat with Dr Michael Pearen, Dr Rebecca Fitzsimmons and PhD students Kelvin Tuong and Tae Gyu Oh.

(Medical Xpress)—University of Queensland researchers have discovered a way of predicting cancer-free survival in breast cancer patients and identified a new treatment target.

The researchers, led by Professor George Muscat from UQ's Institute for Molecular Bioscience (IMB), has found that breast cancer patients with a particular genetic 'signature' are more likely to survive without their cancer spreading.

Professor Muscat and his team also identified a protein that could be targeted by cancer drugs.

"We examined tissue samples from over 100 breast cancer patients and discovered that those with low levels of the enzyme PRMT2 had a better chance of surviving without their cancer metastasising," Professor Muscat said.

"This enzyme has the ability to affect hundreds of genes so we also examined these genes and the proteins they produce.

"We identified one of these proteins, RORγ, as a druggable protein, meaning it appears to be a good target for treatment."

Professor Muscat said this discovery suggests in future doctors will be able to more confidently predict outcomes in some breast cancer patients, and subsequently improve treatment regimes.

"It also opens the way to develop a new and novel drug for the treatment of breast cancer."

Professor Muscat and his team are now beginning to examine experimental drugs that target RORγ to evaluate if any are suitable to decrease the growth of tumours and control metastasis.

Cancer Council Queensland spokesperson Katie Clift said the organisation was proud to fund Professor Muscat's research with a grant of $100,000 for 2014.

"Professor Muscat's research is very promising and we look forward to his findings assisting future treatment of breast cancer, improving survival rates in Queensland.

"Around 2900 Queenslanders are diagnosed with breast cancer every year, and about 500 people die from the disease.

"Funding local studies is imperative, and we are proud to see such world-class research being undertaken at the University of Queensland."

The discovery, published in scientific journal *Molecular Endocrinology*, was supported by The University of Queensland and Cancer Council Queensland and used samples and data provided by a National Breast Cancer Foundation Collaborative Research Program.

IMB acknowledges the contributions of co-authors PhD student Tae Gyu Oh, Dr Peter Bailey, Dr Eloise Dray, Dr Aaron Smith and Dr Dennis Dowhan, and members of the NBCF Collaborative Research Program.

The Institute for Molecular Bioscience, a research institute of The University of Queensland, aims to improve quality of life by advancing medical genomics, drug discovery and biotechnology.

More information: *Molecular Endocrinology*, press.endocrine.org/doi/abs/10.1210/me.2013-1403

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