Researchers identify a new target for breast cancer treatment

October 1 2010

(PhysOrg.com) -- Researchers from the Pharmacy Australia Centre of Excellence - home to UQ's School of Pharmacy - have identified a potential new target for breast cancer therapy.

Published today in the prestigious scientific journal *Cell* are the results of research conducted by UQ's Associate Professor Greg Monteith and Associate Professor Sarah Roberts-Thomson, and their PhD students Helen Faddy and Desma Grice.

The team, which includes colleagues from Johns Hopkins University and the Albert Einstein College of Medicine in the USA, found that the presence of a protein that moves calcium into a specific area of the cell was higher in many breast cancers.

“When people hear about calcium, they think milk, teeth and bones, but calcium is also an important signal that is tightly controlled by specific transporters,” Dr Monteith said.

“We now realise that these transporters can be altered in some cancer types.

“Hopefully these results and our current work will help us exploit these changes and target breast cancer more effectively.”

Characterising the new drug target was a six-year process involving collaboration with international researchers.

“We recognised very early on that this protein was a new kind of calcium transporter and it had particular significance in breast cancer, this was even before it was properly identified,” Dr Roberts-Thomson said.

“We then began working with the Johns Hopkins team to define how it could contribute to cancer pathways.

“The pathway by which this calcium pump contributes to breast cancer is unique, complex and unexpected, and may shed light on other important processes in cells.”

The team has also identified other calcium transporters that may be important in breast cancer.

“We are focussing on those breast cancer types that have the poorest prognosis,” Dr Monteith said.

“Patients with these cancers have the greatest need for new therapies.”

Dr Roberts-Thomson said the research outcome would not have been possible without the assistance of their international partners and the work of PhD students Helen Faddy and Desma Grice.

“Progress in breast cancer research often requires an international effort, and this is one such example,” she said.

Provided by University of Queensland