Researchers identify new protein that triggers breast cancer

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Canadian researchers have identified a new protein in the progression of breast cancer. According to a recent study from the Université de Montréal and the University of Alberta, published in the *Journal of Biological Chemistry*, the protein ARF1 plays a critical role in cancer cell growth and the spread of tumours. Targeting this protein with drug therapy may provide hope to women with breast cancer.

"Until now, ARF1 has been associated with harmless albeit important housekeeping duties of cells," says senior author Audrey Claing, a professor of pharmacology at the Université de Montréal. "The Université de Montréal and the University of Alberta team is the first to characterize the role of ARF1 in breast cancer."

Dr. Claing and her colleagues used invasive breast cancer cell lines to study ARF1's role. These cells are sensitive to a particular growth factor, called epidermal growth factor or EGF, which has previously been shown to stimulate tumour growth and invasion. Their findings suggest that EGF works through ARF1 in these cells. In addition, when ARF1 activity was chemically blocked, breast cancer cell migration and growth was reduced. Conversely, when ARF1 was overproduced in these cells, their movement was enhanced.

"Taken together our findings reveal an unsuspected role for ARF1 and indicate that this small protein may be a potential therapeutic target for the treatment of invasive breast cancers," says Dr. Claing, who is a member of the Groupe d'étude des protéines membranaires as well a the

Groupe de Recherche Universitaire sur le Médicament, two multidisciplinary research teams dedicated to the study of membrane protein functions and the identification of new therapeutic targets for drug discovery.

Article: The article "ARF1 controls the activation of the p13K pathway to regulate EGF dependent growth and migration of breast cancer cells," published in the Journal of Biological Chemistry, was authored by Pierre-Luc Boulay, Mathieu Cotton and Audrey Claing of the Université de Montréal and Paul Melancon of the University of Alberta.

Source: University of Montreal