

Researchers discover protein that could help prevent the spread of cancer

May 4 2011

A protein capable of halting the spread of breast cancer cells could lead to a therapy for preventing or limiting the spread of the disease.

"Cancer researchers want to design new therapeutic strategies in which the metastasis or spreading stage of cancer can be blocked," explains Andrew Craig, lead researcher and a professor in Queen's Department of Biochemistry and Cancer Research Institute. "Patients stand a much better chance of survival if the primary tumor is the only tumor that needs to be treated."

The regulatory [protein](#) identified by Dr Craig's team inhibits the spread of cancer cells by removing and breaking down an invasive enzyme on the surface of cancer cells. If it remains unchecked, this enzyme degrades and modifies surrounding tissues, facilitating the spread of cancer through the body.

Dr. Craig hopes that his team's findings may help develop more targeted therapies that have a specific inhibitory function on this enzyme that is implicated in certain metastatic cancers.

Traditional therapies that have been used to counteract the invasive nature of this particular [enzyme](#) also destroy other enzymes that are important for the body's normal physiological function.

The researchers examined a network of proteins that are responsible for controlling the shape of cancer cells. They focused specifically on parts

of the cell that protrude into surrounding body tissues, allowing the cancer cell to degrade surrounding tissue barriers.

Normal cells also produce similar protrusions as part of a healthy physiological process that allows cells to move through body tissues during an [immune response](#).

During the spread of cancer these normally healthy mechanisms are coopted by cancer cells, allowing the cancer to break through tissue boundaries and colonize distant tissues. This process of cancer spread is known as [metastasis](#) and is frequently the cause of cancer-related deaths.

Provided by Queen's University

Citation: Researchers discover protein that could help prevent the spread of cancer (2011, May 4) retrieved 25 April 2024 from <https://medicalxpress.com/news/2011-05-protein-cancer.html>

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