

New signaling pathway linked to breast cancer metastasis

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Lymph nodes help to fight off infections by producing immune cells and filtering foreign materials from the body, such as bacteria or cancer cells. Thus, one of the first places that cancer cells are found when they leave the primary tumor is in the lymph nodes. The spread of cancer cells to the lymph nodes, lymphatic metastasis, is known to indicate a poor prognosis in many types of cancers; how tumor cells reach the lymph nodes, however, is not well understood.

A new study by Dr. Heide Ford and colleagues at the University of Colorado School of Medicine in Aurora reveals a mechanism underlying this process in breast cancer. Using mouse models, their team found that a protein called SIX1 is a critical player in early stage metastasis, especially lymphatic metastasis. Their study showed that SIX1 induced expression of another protein called VEGF-C, which stimulated the formation of new lymphatic vessels within and near the primary tumor and lymphatic invasion. Strongly supporting a role in human breast cancer, they also showed that the expression of both proteins was correlated in human [breast tumors](#).

Their work has identified the SIX1-VEGF-C pathway as an important signaling pathway involved in breast cancer metastasis, and the targeting of this pathway could lead to new anti-cancer treatments.

More information: SIX1 induces lymphangiogenesis and metastasis via upregulation of VEGF-C in mouse models of breast cancer, *Journal of Clinical Investigation*.

Provided by Journal of Clinical Investigation

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