



MEDICAL EDUCATION AND RESEARCH GRANT OUTCOME REPORT

Individual Stroma-Targeting Therapy in Breast Cancer

Keeping cancer cells from getting comfortable

Disrupting signal exchanges between cancerous cells and host stromal cells may prevent the growth of breast cancer tumors

► **Description:** Breast cancer growth is governed by two-way interactions between malignant cells and non-cancerous host elements (known as stroma). The overarching goal of this project was to develop patient-specific therapeutic strategies aimed at altering the signals sent by the non-cancerous stroma, and thus disrupt the communication process that allows cancer cells to grow and invade the surrounding tissue.

► **Results:** The investigators were successful in growing stromal cells and co-culturing them with breast carcinoma cells. The team isolated 68 patient cells, more than the 50 initially planned for. They identified several signaling pathways between the two types of cells, finding that different pathways led to cancer progression



Dr. Andreas Friedl and his team have identified some of the ways cancer cells communicate with their hosts. Disrupting this process could lead to novel and individually-targeted breast cancer therapies.

in different patients. These results suggest that the disruption of stromal growth signals might be a feasible novel treatment strategy in human breast cancer. They also highlight the necessity of tailoring this treatment to specific patients.

► **Timeline for Application of Results:** 5 to 7 years

► **Next Steps:** The investigators are expanding the list of molecular targets and increasing the number of patients. They also will investigate why a class of drugs known as matrix metalloprotease inhibitors have been shown to be ineffective in breast cancer patients. They plan a grant application focusing on this topic to the National Institutes of Health. An application is pending with the U.S. Department of Defense.

GRANT FACTS

Principal Investigator: Andreas Friedl, MD, Professor, Department of Pathology & Laboratory Medicine, UWSPH

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