BREAST CANCER SCREENING AND MANAGEMENT USING NIPPLE ASPRATE FLUID ASSAY

Early detection and diagnosis are critical to successful treatment of breast cancer. Currently available breast cancer screening tools such as mammography and breast examination miss up to 40% of early breast cancers, are least effective in detecting cancer in young women whose tumors are often more aggressive, and require that an invasive needle or surgical biopsy be performed when an area of suspicion is identified to confirm the presence of malignancy. Over a million surgical or needle breast biopsies will be performed this year to diagnose 203,000 new breast cancers. Using current techniques, women will undergo 5 diagnostic biopsies to diagnose each new cancer, and each biopsy is painful, invasive and expensive.

The current invention developed by researchers at the University of Missouri analyses nipple aspirate fluid (NAF) for predictive biomarkers of breast cancer. One such biomarker is the Thomsen-Friedenreich (TF) glycoantigen, which is over-expressed on the majority of breast cancer cells. NAF can be obtained non-invasively and contains a small number of cancer cells, but relatively high levels of proteins and lipids. We have developed and tested in a clinical study a simple and sensitive immuno-assay for identifying the cancer-associated TF and Tn biomarkers in NAF. Antigen detection and NAF collection are inexpensive procedures, involving commercially available reagents, insuring that the procedures could be rapidly translated to the clinic upon validation.

POTENTIAL AREAS OF APPLICATIONS:
- Screening for and managing breast cancer

PATENT STATUS: U.S. Patent Application No. 12/187,159
INVENTOR(S): Thomas P. Quinn; Susan L. Deutscher; Ed Sauter
CONTACT INFO: Paul Hippenmeyer, PhD, MBA; hippenmeyerp@missouri.edu; 573.882.0470