Novel Splice Variants of PIPKIgamma Provide Biomarkers for Breast Cancer Diagnosis and Prognosis

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing novel biomarkers that could be used to monitor the progression of epithelial cancers, including breast cancer.

OVERVIEW

According to the Centers for Disease Control and Prevention, more than 185,000 women in the U.S. were diagnosed with breast cancer and more than 40,000 died as a result of the disease in 2005. It is difficult to predict how the disease will progress in a given patient. Identifying individuals with poor prognosis may enable more informed treatment decisions, but few markers of breast cancer progression are available.

Type I phosphatidylinositol phosphate kinases (PIPKIs) may provide additional cancer biomarkers. In mammals, phosphatidylinositol-based signaling pathways play crucial roles in the regulation of cell processes at the plasma membrane and in the nucleus. At least three isoforms of PIPKI exist, and these isoforms are expressed at different times and locations. One of the isoforms, PIPKIgamma, binds E-cadherin, a known breast cancer biomarker, and controls its function.

THE INVENTION

UW-Madison researchers have identified novel variants of PIPKIgamma that could be used to monitor breast cancer progression and determine prognosis. The variants correlate with key markers of breast cancer progression, including the loss of E-cadherin and increased HER1 or HER2 expression.

APPLICATIONS

• Monitoring breast cancer progression
• Diagnosing poor prognosis for breast cancer
• Monitoring other epithelial cancers, including ovarian, uterine, prostate and skin cancer

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KEY BENEFITS

- Provides new validated biomarkers for breast cancer progression and prognosis
- Complements existing biomarkers
- Useful for other cancers in addition to breast cancer
- Allows physicians and patients to make more informed treatment decisions
- Could be used to identify agents that bind or modulate these variants

STAGE OF DEVELOPMENT

Successfully tested in an archived collection of 438 samples.

ADDITIONAL INFORMATION

Tech Fields
Diagnostic Assays - Cancer

CONTACT INFORMATION

For current licensing status, please contact Joshua Carson at icarson@warf.org or 608-960-9844.