



Muc16 Bound to Immune Cells Provides an Improved Indicator for Ovarian Cancer and Preeclampsia

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an improved method of detecting and monitoring ovarian cancer, as well as preeclampsia.

Overview

Each year, approximately 20,000 American women are diagnosed with ovarian cancer and about 15,000 women die of the disease. The overall five-year relative survival rate for women with ovarian cancer is 46 percent. The survival rate improves to 93 percent if the cancer is diagnosed at an early stage, before it has spread. But only 19 percent of ovarian cancer cases are diagnosed at this local stage.

CA125 currently is used as a biomarker for ovarian cancer. Levels of CA125 in the serum rise when a patient has ovarian cancer. However, they also rise if a patient is pregnant or has endometriosis, alcoholic liver disease, pleurisy or bronchitis, making CA125 most useful for monitoring patients with ovarian cancer for disease recurrence after diagnosis and therapy. Because CA125 assays give high levels of false positives, they are a poor screening tool for the general population. A more sensitive and specific biomarker with better diagnostic capacity for ovarian cancer is needed.

Preeclampsia is a disease that occurs during pregnancy, affecting both the mother and fetus. More than six million women worldwide suffer from preeclampsia each year. It is a leading cause of maternal death.

The cause of preeclampsia is unknown, although some risk factors have been identified. No effective tests for predicting when preeclampsia will occur currently are available.

The Invention

UW-Madison researchers now have discovered a new prognostic and diagnostic indicator for ovarian cancer and preeclampsia. CA125 is a peptide epitope from a large glycosylated protein called Mucin 16 (Muc16). The researchers found that levels of Muc16 bound to immune cells provide a more specific indicator of ovarian cancer regression or recurrence. Because Muc16 binds to specific subsets of immune cells that express Siglec-9, measuring the amount of Siglec-9 expressed on the immune cells also provides a method of detecting ovarian cancer.

In addition, Muc16 and Siglec-9 may serve as indicators of preeclampsia in pregnant women. They can be used to detect preeclampsia and to distinguish women with ovarian cancer from healthy pregnant women and women with preeclampsia.

Applications

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- Provides a prognostic and diagnostic indicator for ovarian cancer
- Provides an indicator for preeclampsia in pregnant women

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- Also may be useful to detect and manage endometriosis, endometrial cancer or liver cirrhosis

Key Benefits

- More sensitive and selective than serum CA125 levels
- Can be used for early detection of epithelial ovarian cancer, unlike CA125
- Can be used in addition to CA125
- Capable of distinguishing ovarian cancer patients from healthy pregnant women and women with preeclampsia, unlike CA125

Additional Information

For More Information About the Inventors

- [Manish Patankar](#)

Related Intellectual Property

- [View Divisional Patent in PDF format.](#)

Publications

- Belisle et al. 2007. Peritoneal Natural Killer Cells from Epithelial Ovarian Cancer Patients Show an Altered Phenotype and Bind to the Tumour Marker MUC16 (CA125). Immunology 122, 418–429.

Tech Fields

- [Diagnostics & Biomarkers : Biomarkers](#)

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