



MEDICAL EDUCATION AND RESEARCH GRANT OUTCOME REPORT

A new diagnostic test to monitor regression and recurrence of epithelial ovarian cancer


Test may allow earlier detection of ovarian cancer

Work with the MUC16 protein shows it may be a marker for ovarian cancer and identify preeclampsia in pregnant women

► **Description:** More than 300 women a year in Wisconsin die of ovarian cancer. One reason for this is that most tumors are discovered late. This proposal sought to develop a novel diagnostic test that would identify the disease at a much earlier stage, using the presence of a specific protein — MUC16 — that has been identified as a marker.

► **Results:** The data show that the presence of the protein, MUC16, can be used to differentiate between healthy women and ovarian cancer patients. The investigators have refined a potential clinical test that could lead to earlier detection of ovarian cancer. The effectiveness of the test will require further clinical investigation. The initial findings have been published in

Gubbels et al. *Molecular Cancer* 2010, 9:11
<http://www.molecular-cancer.com/content/9/1/11>



RESEARCH Open Access

MUC16 provides immune protection by inhibiting synapse formation between NK and ovarian tumor cells

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Abstract
Background: Cancer cells utilize a variety of mechanisms to evade immune detection and attack. Effective immune detection largely relies on the formation of an immune synapse which requires close contact between immune cells and their targets. Here, we show that MUC16, a heavily glycosylated 3-5 million Da mucin expressed

Dr. Patankar and his teams published their findings in the *Journal of Molecular Cancer*

the journal *Molecular Cancer*. In addition, this test also appeared successful in predicting preeclampsia in pregnant women. This has expanded the potential impact of these findings. These findings have been submitted to a major medical journal as well.

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

► **Next Steps:** The National Institutes of Health have pledged \$355,287 through an R21 grant to continue this work in a clinical study that will test these findings with a larger cohort of patients. The results of this study may allow for the proper formulation of a clinically useful diagnostic test for ovarian cancer and preeclampsia.

GRANT FACTS

Principal Investigator: Manish S. Patankar, PhD, Department of Obstetrics & Gynecology, UWSMPH

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Research Keywords: ovarian cancer, biomarker, early detection, disease monitoring, preeclampsia