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## **APOLLO researchers uncover new target for ovarian cancer treatment**

**Bethesda, Md.** – Scientists have identified a new target in ovarian cancer that is particularly vulnerable to chemotherapy. The discovery will allow researchers to better predict how this cancer will behave, particularly the most common and lethal, high-grade serous ovarian cancer (HGSOC). Ovarian cancer is one of the leading causes of cancer deaths among women.

The study, “Proteogenomic analysis of enriched HGSOC tumor epithelium identifies prognostic signatures and therapeutic vulnerabilities,” published March 13 in *NPJ Precision Oncology*, is the work of the Applied Proteogenomics Organizational Learning and Outcomes ([APOLLO](#)) research network, a [cancer moonshot inspired initiative](#) led by the Uniformed Services University’s (USU) Murtha Cancer Center Research Program (MCCRP).

The study team used an industrialized, cohort-scale application of laser microdissection, which selectively harvests tumor cells from the cancer tissue microenvironment. Using this technique, they were able to look closer and better understand tumor tissue biology. This exquisite clarity allowed the researchers to break down the intricate cellular environment, uncovering new patterns related to the immune system and the purity of tumors. These findings can be used to predict outcomes and provide insights into disease progression.

The researchers also identified the first-ever unique fingerprint of a change in the tumor DNA or genetics identified through their dual assessment of both genes and proteins in tumors. In addition, they found a part of the tumor cell that is particularly vulnerable to chemotherapy, which significantly moves the needle for these patients who currently have limited treatment options, explained Dr. Craig Shriver, Murtha Cancer Center and MCCRP director and an author on the study.

“This research galvanizes the importance of investigating the cancer cells themselves separated from the supporting cells, like blood vessels and structural cells, and performing separate analyses of both of these elements in large groups of cancers. This could also help uncover new therapeutic opportunities for cancer patients,” Shriver said.

This effort, under the APOLLO-2 Team, brings together the Department of Defense, the National Cancer Institute, and the Department of Veterans Affairs and physicians from across the globe. Together, this team of researchers has been able to incorporate proteogenomics into patient care as a way of looking beyond the genome, or set of genes – in other words, looking at all possible molecules at the DNA, RNA, and protein levels, to better understand and, ultimately, treat various types of cancer.

The APOLLO-2 Team was led by investigators at USU’s MCCRP along with the Women’s Health Integrated Research Center at Inova, and physicians and scientists from multiple cancer centers across the U.S., Australia, Canada, and the U.K. Funding for this research was provided by Genentech-Roche, Astra Zeneca, Beigene, and AbbVie.

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