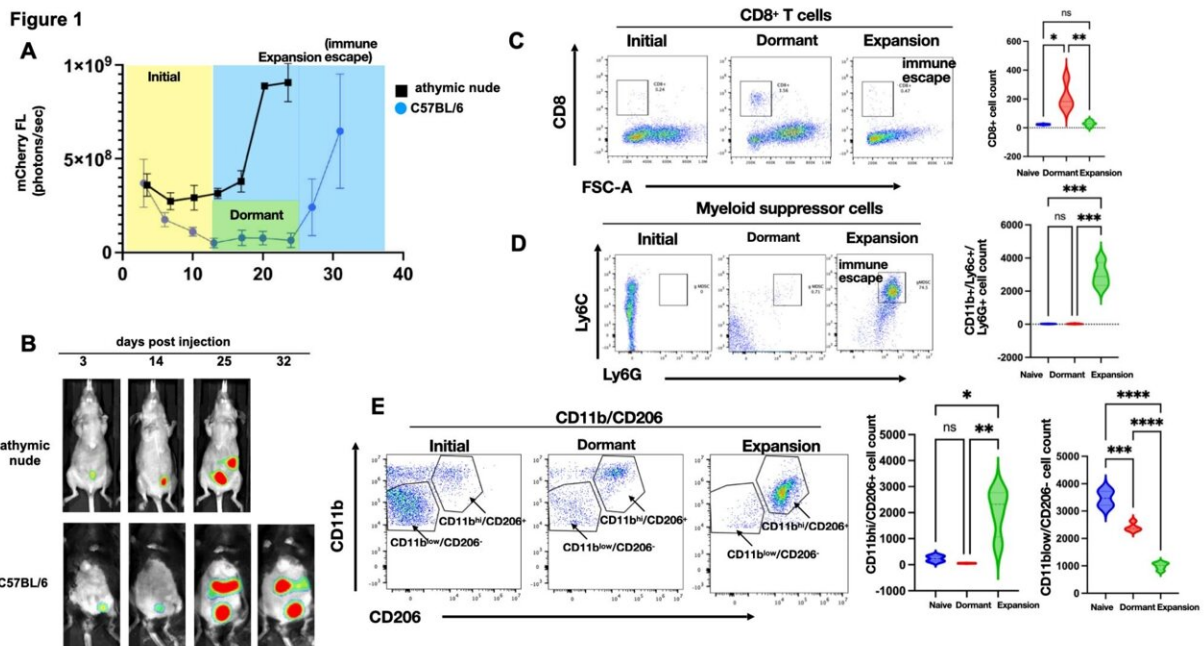


# Study reports progress in long-term protection against ovarian cancer tumors

December 11 2023



Characterization of immune response during ovarian tumor progression. mCherry+ TKO mouse ovarian cancer cells were injected i.p. in C57BL/6 immunocompetent mice (n=50) or immunocompromised athymic nude mice (n=10). A. Tumor growth was quantified using mCherry ROI fluorescence. Note difference in tumor kinetics between mouse strain with the dormant phase observed only in C57BL/6 mice; B. Representative images of live animal imaging showing progression of i.p. tumor burden; C. Peritoneal lavage from TKO-bearing C57BL/6 mice from each phase of tumor progression (n=6) was stained with anti-CD8 and analyzed by flow cytometry; D. Peritoneal lavage from TKO-bearing C57BL/6 mice from each phase of tumor progression (n=6) was stained with anti-CD11b, anti-Ly6C, and anti-Ly6G and analyzed by flow

cytometry; E. Peritoneal lavage from TKO-bearing C57BL/6 mice from each phase of tumor progression (n=6) was stained with anti-CD11b and CD206 and analyzed by flow cytometry. Representative dot plots are shown. Gating strategy is shown in Supp. Fig. 1. Data are presented as Mean  $\pm$  SEM and One-way ANOVA was used for statistical analysis. Credit: *Cancer Immunology Research* (2023). DOI: 10.1101/2023.09.27.559828

Investigators from the C.S. Mott Center for Human Growth and Development at the Wayne State University School of Medicine reported today in *Cancer Immunology Research* the characterization of a novel therapeutic approach capable of restoring immune surveillance and providing long-term protection against ovarian cancer tumors.

The study, "Immune modulation of innate and adaptive responses restores immune surveillance and establishes anti-tumor immunological memory," used an immune modulatory platform called CARG-2020 in collaboration with CaroGen Corp.

CARG-2020, an onco-immunomodulatory vesicle, is capable of inducing in situ vaccination and activation of both arms of the immune system, leading to the development of a long-term antitumoral immune memory capable of preventing recurrence in animal models of ovarian cancer.

The team of investigators led by Gil Mor, M.D., Ph.D., scientific director of the C.S Mott Center, and Ayesha Alvero, M.D., M.S., director of the Ovarian Cancer Program at the C.S. Mott Center, characterized the efficacy of CARG-2020s.

"The ability of CARG-2020 to modulate the two arms of the immune system and to restore [immune surveillance](#) provides a unique protection

that eliminates existing tumors, prevents tumor recurrence, and provides 100% survival benefit over a long period. These findings make CARG-2020 a promising candidate for further development for human cancer immunotherapy," Mor said.

CaroGen is finalizing a protocol to advance CARG-2020 into Phase 1 [clinical trials](#) for ovarian cancer patients. This novel approach may prove more effective than existing immunotherapies, which had limited results in patients with ovarian cancer.

"More than 13,000 women die of ovarian cancer in the United States each year, and CARG-2020 could be a breakthrough immunotherapy in helping them to live longer," Alvero said. "CARG-2020 preclinical results are impressive and could potentially help to prolong and save lives in patients with ovarian cancer."

A phase 1 clinical trial is in preparation in collaboration with investigators from the University of South Florida and CaroGen Corp.

"Our goal is to file an investigation of new drug application for CARG-2020 in the second half of 2024 and conduct a safety and efficacy Phase 1/1b clinical trial in patients with ovarian [cancer](#) at University of South Florida," said Bijan Almassian, Ph.D., CaroGen's chief executive officer.

That effort is being led by Deborah Church, M.D., chief medical officer of CaroGen, along with Dr. Mor and Thomas Rutherford, Ph.D., M.D., professor of obstetrics and division director of gynecology oncology at the University of South Florida's Morsani College of Medicine.

"This research at Wayne State is an excellent example of the important work that our faculty are doing in partnership with corporate partners," said Timothy Stemmler, Ph.D., interim vice president for research. "Dr.

Mor and his research team are doing critical research that is leading to great advances to improve women's health and save lives."

**More information:** Ayesha B. Alvero et al, Immune modulation of innate and adaptive responses restores immune surveillance and establishes anti-tumor immunological memory, *Cancer Immunology Research* (2023). [DOI: 10.1158/2326-6066.CIR-23-0127](https://doi.org/10.1158/2326-6066.CIR-23-0127). On *bioRxiv*: [DOI: 10.1101/2023.09.27.559828](https://doi.org/10.1101/2023.09.27.559828)

Provided by Wayne State University

Citation: Study reports progress in long-term protection against ovarian cancer tumors (2023, December 11) retrieved 27 April 2024 from <https://medicalxpress.com/news/2023-12-long-term-ovarian-cancer-tumors.html>

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