Researchers at the University of South Florida have discovered chemotherapeutic agents that inhibit cell proliferation of ovarian cancer.

Ovarian cancers are highly lethal tumors which account for approximately three percent of cancers among women, and cause more deaths than any other cancer of the female reproductive system. Ovarian cancer is the fifth leading cause of cancer-related death among women and is rarely diagnosed at early stages, which makes the treatment of this cancer at advanced stages very difficult. At diagnosis, the majority of patients have metastatic disease, and the long-term survival remains low. Additionally, the emergence of therapy-resistant ovarian cancer (OC) cells has increased the lethality of these tumors. Driven by the increasing incidence of ovarian cancer, the ovarian cancer drug market will more than triple over this decade. Thus, there is a great need for more effective treatment options.

Scientists at USF have developed a method of inhibiting ovarian cancer proliferation via protein kinase C (PKC) or pan-atypical PKC inhibitors ACPD and ICA-1. ACPD inhibits both PKC-ι (PKC-ι) and PKC-ζ (PKC-ζ), while ICA-1 is specific for PKC-ι. ACPD treatment of HEY OC cells demonstrated inhibition of the cancer cell population growth by 82% compared to controls at 24 hours post-treatment. In addition, ICA-1 also inhibited OC cell proliferation by 60% 72 hours after the drug was administered. These results suggest the potential of ACPD and ICA-1 as chemotherapeutic agents, especially for ovarian cancer patients that have PKC-ι or PKC-ζ over expression in their tumors.

ADVANTAGES:
- Potential chemotherapeutic agent
- Reduce lethal tumors
- Combat therapy-resistant cancer cells