Researchers at the University of South Florida have developed a method for treating prostate cancer via atypical protein kinase C inhibitors - ACPD and ICA-1.

Prostate cancer is the most common cancer among men and is made up of slow growing tumors. PKC-iota is a phosphorylating protein that plays a role in mediating apoptosis. It is heavily expressed in prostate cancer cells. PKC-zeta has been shown to contribute to the survival of some cancer cells. ACPD and ICA-1 inhibit atypical Protein Kinase C forms iota and zeta.

Researchers at USF have discovered that by inhibiting both PKC-iota and PKC-zeta, there is increased prostate cancer cell death without compromising non-malignant prostate cells. This invention addresses the need for new chemotherapeutics for prostate cancer.

The effectiveness of ACPD and ICA-1 was tested on 2 cell lines. The researchers utilized the cancer cell line DU-145 and epithelial cell line RWPE-1. Preliminary results demonstrated that treatment of DU-145 showed a statistically significant decrease in cells, proportional to the concentration of ACPD and ICA-1.

Our inventors were successful in demonstrating that ACPD and ICA-1 are effective inhibitors of PKC-iota and PKC-zeta. The results show that ACPD and ICA-1 effectively reduce the neogenesis of DU-145 prostate carcinoma cells while having negligible effect on the non-malignant prostate RWPE-1 cells. Thus, this technology highlights a non-invasive means for the inhibition of two specific forms of atypical protein kinases-zeta and iota and therefore lays the foundation for the treatment of prostate cancer.