

Study identifies new prostate cancer drug target

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Research led by Wanguo Liu, PhD, Associate Professor of Genetics at LSU Health Sciences Center New Orleans, has identified a new protein critical to the development and growth of prostate cancer. The findings are published online in the Early Edition of *Proceedings of the National Academy of Sciences*, available the week of February 6, 2012.

Dr. Liu and his team discovered a protein called ARD1 which is involved with the male hormone, androgen, and its receptor. Prostate cancer is a hormone-regulated disease and the main hormone is androgen. Androgen activates its receptor - [androgen receptor](#) (AR) to play a critical role in the development and progression of prostate cancer. Therefore, androgen deprivation therapy has been a standard treatment for advanced prostate cancer.

"However, a majority of tumors invariably relapse and become an androgen-independent prostate cancer from which most patients eventually die," notes Dr. Liu, who is also a member of the LSUHSC Stanley S. Scott Cancer Center.

To find an alternative strategy to treat prostate cancer, Dr. Liu's group is studying androgen receptor activators and increasing levels of these activators leading to prostate cancer. Following the discovery of this new protein, they determined that ARD1 is overproduced in the majority of prostate cancer samples, that it activates the androgen receptor, and that it is an essential component of prostate cancer cell growth.

"In addition, we demonstrated that inactivation of ARD1 inhibits the function of androgen receptors resulting in complete suppression of prostate [cancer cell growth](#) in tissue culture and prostate [tumor growth](#) in mice," reports Dr. Liu.

"Furthermore, we revealed that the role of ARD1 in the development of prostate cancer is to modify the androgen receptor to enhance its activity."

According to the [National Cancer Institute](#), about 242,000 American men will be diagnosed with prostate cancer this year. It is the second most diagnosed cancer among men, only behind skin cancer. An estimated 28,170 men will die from prostate cancer in 2012.

"Our study provides a novel avenue for controlling AR-mediated [prostate tumor](#) development by directly inhibiting the function of ARD1 or AR-ARD1 interaction," says Dr. Liu. "Developing an ARD1-specific inhibitor or an AR-ARD1 interaction-disrupting compound may be of therapeutic benefit in the treatment of prostate cancer."

Provided by Louisiana State University Health Sciences Center

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