

# Team finds new target for treatment of advanced prostate cancer

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(PhysOrg.com) -- In its early stages, prostate cancer requires androgens (hormones that promote the development and maintenance of male sex characteristics) for growth, and current first-line therapies target the receptor for these hormones to slow cancer's development and spread.

However, advanced prostate cancers are often androgen-independent, meaning that androgen-blocking therapies are ineffective.

Scientists aren't sure how this shift occurs as prostate cancer advances.

One idea is that [prostate cancer](#) cells acquire the ability to make their own androgen. Another says that the [androgen receptor](#) that is known to stimulate tumor growth can still be active even when the hormone is not present. Most likely, both are important.

A recent study by UNC researchers, published in the [Journal of Biological Chemistry](#), provides evidence for the second theory, demonstrating that expression of one of a group of genes found only in humans and non-human primates can promote androgen receptor activity in concert with other proteins called coregulators.

One of a group of MAGE genes, so named because they were originally identified in [melanoma](#), called MAGE-11 interacts with another protein, called p300, to provide the cancer cells with a way to enhance androgen receptor signaling and promote [tumor growth](#), even when patients are undergoing androgen deprivation therapy.

According to team leader Elizabeth M. Wilson, PhD, professor of pediatrics and biochemistry and biophysics at UNC-Chapel Hill, "We found that a small portion of the androgen receptor interacts with the MAGE-11 molecule which serves as a bridge to p300, a strong histone modifying enzyme that increases androgen receptor activity. This is exciting because it shows how the cancer cells have developed a way to boost androgen receptor activity, even in the absence or at low levels of the hormone that binds the androgen receptor."

Wilson, who is also a UNC Lineberger member, goes on to explain that understanding this mechanism opens the door to additional targets for new therapies and broader clinical applications of new drugs.

"The MAGE-11 molecule is a promising target for shutting down androgen receptor activity that promotes the growth of cancer cells," she adds.

Provided by University of North Carolina School of Medicine

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