

Effective prostate cancer treatment discovery

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Monash University biomedical scientists have identified a new way to treat castrate resistant cells in prostate cancer sufferers - the most common cancer in Australian men.

For more than 60 years the main way to treat men with prostate cancer has involved removing the hormones that fuel growth of the cancer [cells](#). Although initially effective this treatment inevitably fails and when the tumour growth resumes, the disease is incurable. The team, from the Prostate & Breast Cancer Research Program, has discovered a way to treat these potentially fatal diseased cells, which remain in a patient after they have undergone hormone treatment.

The findings have been published in the prestigious medical journal *PNAS*.

Associate Dean, Research Centres & Institutes and co-author Professor Gail Risbridger said the studies provided proof of the controversial concept that estrogens (hormones mainly thought as being important for women) could be good for men and used therapeutically to treat prostate cancer.

"The research showed that drugs that activate one of the two estrogen receptors, causes cell death. Most commonly cell death in patients with prostate cancer is achieved by withdrawing androgens (male hormones) which results in castration," Professor Risbridger said.

"Although the bulk of the tumour is removed by castration, some cells

remain and these castrate-resistant cells are the ones that give rise to recurrent incurable disease"

The team used a drug developed to selectively and specifically activate the beta estrogen receptor in the prostate.

"It not only inhibits the growth of prostate cancer but also kills off [cancer cells](#) that are resistant to conventional treatment such as androgen deprivation therapy, more commonly known as castration therapy and does so using a mechanism that is different to castration." Professor Risbridger said.

The team made the discovery in animal models, and then successfully replicated laboratory results using human cells and tissues from patients with prostate cancer.

"The team at Monash University has discovered how this compound working through the beta receptors targets a small, but very important, population of cells in the tumour. It is a significant piece of the puzzle that will help medical research in this field - an achievement that could eventually enhance treatment options for patients around the world with advanced prostate cancer." Professor Risbridger said.

Prostate cancer is the most common cancer in Australian men and is the second most common cause of cancer deaths in men. Each year in Australia, close to 3,300 men die of prostate cancer - equal to the number of women who die from breast cancer annually. About 20,000 new cases are diagnosed in Australia every year and one in nine men will develop prostate cancer in their lifetime. Current treatments of prostate cancer include hormone therapy however patient side effects can be devastating.

"This research also has personal meaning and provides me with the

imperative to conduct basic biomedical research where the fundamental outcomes such as those we describe, may ultimately translate into more effective ways to treat [prostate cancer](#)" Professor Risbridger said.

Provided by Monash University

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