

# Vitamin E in front line of prostate cancer fight

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Survival rates of the world's most common cancer might soon be increased with a new vitamin E treatment which could significantly reduce tumour regrowth.

Queensland University of Technology (QUT) prostate cancer researchers are leading the fight against a disease which kills 3000 Australian men a year.

Dr Patrick Ling, whose research will be a centrepiece of the new \$354 million Translational Research Institute (TRI) when it opens in Brisbane, is leading a team of researchers who have identified a particular constituent of vitamin E, known as tocotrienol (T3), which can inhibit the growth of prostate tumours.

Construction of TRI officially began today (October 19) at the Princess Alexandra Hospital. The world-class facility brings together some of Queensland's best medical researchers from four leading Australian research facilities to turn their work into accessible and potentially life-saving health treatments.

Dr Ling's research has been funded by Davos Life Science in Singapore, who recently awarded him a further \$128,000 to undertake a one-year study of the long-term effectiveness of T3 to prevent the recurrence of treated prostate cancer tumours.

"Prostate cancer is the most common type of cancer in developed

countries," Dr Ling said.

"It is responsible for more male deaths than any other cancer, except lung cancer."

Dr Ling said existing chemotherapy and hormonal therapy treatment of prostate cancer was insufficient because it failed to kill off the prostate cancer [stem cells](#) (CSCs) which were believed to be responsible for the regrowth of tumours.

However, the research team have discovered a particular form of T3, called gamma-tocotrienol ( $\gamma$ -T3), can successfully kill off the prostate cancer CSCs.

"Currently there is no effective treatment for metastatic prostate cancer, because it grows back after conventional therapies in more than 70 per cent of cases," he said.

"But with  $\gamma$ -T3, QUT researchers have found a better way to treat prostate cancer, which has the potential to inhibit recurrence of the disease."

Dr Ling said in animal trials,  $\gamma$ -T3 completely inhibited tumour formation in more than 70 per cent of the mice implanted with prostate cancer cells and fed the vitamin E constituent in water. In the remaining cases, tumour regrowth was considerably reduced, while tumours reformed in 100 per cent of the control group.

The findings were published recently in the *International Journal of Cancer*.

The next stage of Dr Ling's study has begun and will determine the long-term effectiveness of the  $\gamma$ -T3 treatment, with plans to progress to

clinical trials in the future.

"Previous clinical trials using another vitamin E constituent to inhibit [prostate cancer](#) development were unsuccessful, but these trials did not use the vitamin E constituent  $\gamma$ -T3," he said.

"Other research has found  $\gamma$ -T3 is also effective in suppressing other types of cancer, including breast, colon, liver and gastric."

Dr Ling said while not all vitamin E preparations had the active constituent, natural vitamin E obtained from palm oil was rich in  $\gamma$ -T3.

Professor Ross Young, from QUT's Institute of Health and Biomedical Innovation (IHBI), said one of TRI's greatest strengths was to bring together leading researchers.

"Collaboration, which combines the expertise of researchers from different disciplines and institutions to achieve common goals, will lead to better solutions," Professor Young said.

QUT Vice-Chancellor Professor Peter Coaldrake said TRI would greatly benefit Queensland's and Australia's economy and ability to attract the world's best researchers to our shores.

"By having this world-class facility producing research of the highest quality, we will be increasing Queensland's international competitiveness in research," Professor Coaldrake said.

Provided by Queensland University of Technology

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