

Scientists investigate possible key to non-invasive prostate testing

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The project, led by Chancellor's Postdoctoral Research Fellow Dr. Nham Tran and Head of the Translational Cancer Research Group Dr. Rosetta Martiniello-Wilks, will establish if microRNA collected from body fluids can signal the early stages of the disease.

If so, the technique has the potential to supersede current methods, including invasive [prostate biopsies](#), that are blamed for many men avoiding regular checkups.

The project has attracted \$500,000 in international funding from the highly competitive US Army Department of Defense Prostate Cancer Research Program – the only Australian project to receive funding from the program this year.

MicroRNAs can be found in a range of bodily fluids such as saliva. Their presence may provide important clues to when prostate cancer appears in the prostate and then progresses to a more aggressive form that spreads to other organs in the body.

"No one has actually asked the question, are these microRNAs circulating in prostate cancer patients? The idea was to look for the expression of these particular RNAs in various [body fluids](#) in relation to the disease states of men with prostate cancer," Dr. Tran said.

The research team, including Dr. Eileen McGowan (UTS), Dr. Murray Cairns (University of Newcastle and Associate Professor Paul Cozzi

(University of New South Wales), will create a unique bio bank of body fluids and tissues from prostate cancer patients in order to develop a series of microRNA profiles.

Associate Professor Cozzi, a urological surgeon, will collect body fluid samples from patients before and after radical prostatectomy surgery. The samples will show the activity of microRNAs at various stages of the disease and these profiles can then be used as a measure against which all men could potentially be tested.

"You can imagine, if a man comes to the clinic and presents with early stage prostate cancer, he will have a distinct profile for these [microRNA](#) biomarkers when compared to a man with more advanced prostate disease," Dr. Tran said.

"As there is minimal pain associated with the collection of saliva and urine, this would encourage more men to visit their local doctor and submit samples for prostate cancer screening."

According to the Prostate Cancer Foundation of Australia, prostate cancer is the most commonly diagnosed cancer and the second most common cause of cancer death in men.

Dr. Martiniello-Wilks said early detection and treatment is crucial in providing cancer sufferers with a positive outcome.

"In most cases, early diagnosis of organ confined prostate cancer followed by radical prostatectomy can be curative," she said.

"If we can successfully uncover a set of biomarkers to identify men with high risk [prostate cancer](#), these men can be treated earlier, offering an opportunity to wider treatment options and the chance to live a normal life."

Provided by University of Technology, Sydney

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