

Flower power may bring ray of sunshine to cancer sufferers

Dr. Jonathan Harris, a senior lecturer in Queensland University of Technology's Faculty of Science, and PhD student Joakim Swedberg, both from the University's Institute of Health and Biomedical Innovation, are working on the naturally occurring molecule, and have received over \$600,000 worth of grants this year to support their research.

The grants came from Queensland Cancer Research, the Prostate Cancer Foundation, and the National Health and Medical Research Council. “We are interested in this miniprotein as a potential treatment of prostate cancer, in particular for those patients who relapse,” said Dr Harris.

“The best thing to do in those cases is block the disease spreading to other organs, particularly the spine, which is very debilitating; it is not the prostate tumour that kills you, it is when the cancer cells escape from the prostate so we want to prevent that.”

Another QUT researcher, Professor Judith Clements, had previously shown that the action of enzymes called proteases was a key event in tumour spread, and Dr Harris said that the sunflower mini-protein, known as the protease inhibitor, was able to block these enzymes in test tube-based assays.

“However, it also inhibits a whole range of proteases, some of which control important processes in the body, so we have re-engineered the molecule so it should just block the proteases produced in prostate cancer and hence stop tumour spreading, whilst leaving other processes intact,” he said.

The National Health and Medical Research Council grant will allow Dr Harris and his team to perform tests on the re-engineered inhibitor in animals over the next months.

“It feels like we have been covered in a shower of gold at the moment, it is very exciting for us because we are a small team but we have been working very hard on this for a long time,” he said.

“We are extremely happy because now we can carry out trials in mouse-models of prostate cancer and if we have positive results, we could get a pharmaceutical industry partner interested in the work.

“Currently bluebox, QUT’s commercialisation company, is helping us towards that goal.”

“The dream end-product is having a drug which could be produced in sunflower seeds and given as a simple dietary supplement for people with prostate cancer.”

Source: Queensland University of Technology

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