



Flowers a cancer hope

■ Michelle Wheeler

Most people see a sunflower as a pretty bloom but for Associate Professor Joshua Mylne it could hold the key to saving millions of lives.

The University of WA plant biologist is researching how cancer drugs could be manufactured in plants, making them cheaper to produce.

Dr Mylne, who moved to Perth in December, discovered in 2011 **how a drug-like protein in sunflower seeds could block matriptase, a digestive enzyme associated with breast cancer.**

He said cancer often caused digestive enzymes, or proteases, to “turn

on” and eat into a person’s flesh, creating a space for the tumour to grow.

Dr Mylne said the protein in sunflowers had also been modified to inhibit kallikrein, an enzyme associated with prostate cancer.

“Drug designers are fiddling around with this and they’re actually finding it’s a cool way to inhibit lots of different proteases,” he said.

“The thing about proteins as drugs though is they’re bigger than usual and they’re expensive ... so that was part of the motivation to understand how plants make them.”

Even the most incredible discover-

ies in the laboratory usually take more than a decade to reach chemists’ shelves, but drug companies such as Pfizer are returning to protein drugs similar to the one Dr Mylne is researching.

Meanwhile, Dr Mylne is working on how the plant makes the molecule, so they can better control production.

He has been able to produce the protein from sunflowers in the seeds of cress plants and believes that drugs are most likely to be made in non-food crops such as safflowers.



Growing idea: Joshua Mylne with a model of the seed protein. Picture: Bill Hatto