

# Sunflower seed drug discovery earns national award

25 June 2012

The discovery that a cancer drug is hiding in sunflower seeds has won a UQ plant scientist a national award.

Dr Joshua Mylne from UQ's Institute for Molecular Bioscience was awarded the 2012 Peter Goldacre Award by the Australian Society of Plant Scientists in recognition of his finding that the drug-like protein SFTI begins life buried in a sunflower seed protein.

SFTI is a small, stable protein ring that can block another type of protein called proteases, which can be secreted by tumours to eat the surrounding flesh and create space into which the tumour can grow.

Dr Mylne went searching for the gene that encodes SFTI and found it was buried in a much larger protein with a completely different function: one that provides nourishment for seeds as they grew.

" For two completely unrelated proteins to be borne out of one precursor protein is exceedingly rare," Dr Mylne said.

" I discovered that SFTI emerges from the larger protein by essentially ' hijacking' the protein processing machinery of the seed protein."

Dr Mylne also demonstrated that, by moving the SFTI-encoding gene into a model plant species called Arabidopsis, SFTI and similar drugs could be produced in plant seeds.

" Moving the processing system into another plant species proved that SFTI and related proteins used in drugs could be manufactured cheaply using plants, perhaps even by turning seeds into pills.

" From a scientist's point of view, this discovery also has interesting implications for protein evolution."

The Peter Goldacre award was established nearly 50 years ago as lasting tribute to a young Australian plant scientist who died at 34 years of age. It aims to encourage other young plant researchers and comes with a prize of \$2000.

Dr Mylne, currently an Australian Research Council QEII Fellow and the IMB's John S. Mattick Fellow, will receive the Goldacre Medal and present the ASPS Peter Goldacre Award Lecture at the

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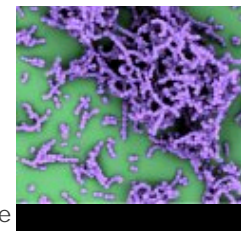
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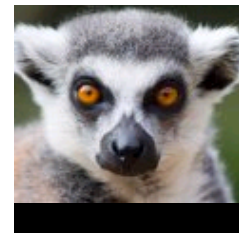
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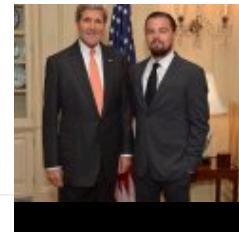
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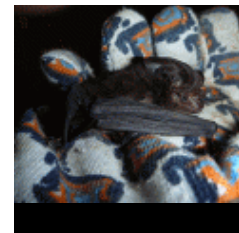
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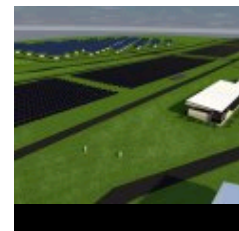
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