

Cone snails and plants used to develop oral drug for pain

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Molecules from cone snail venom and African plants are being used by Queensland researchers as a blueprint to develop an oral drug to treat chronic pain.

Professor David Craik and Dr Richard Clark from the Institute for Molecular Bioscience have received \$218,275 from the National Health and Medical Research Council (NHMRC) to aid in translating their research into a product available for Australians to use.

Studies on the molecule they have developed have shown that it is effective in relieving neuropathic pain in animals.

“Neuropathic pain is one of the most severe forms of chronic pain, and very difficult to treat,” Dr Clark said.

“Regular pain occurs when the nervous system is stimulated by, for example, an injury, whereas neuropathic pain occurs when the nervous system itself is damaged.”

“Current treatments in neuropathic pain only provide meaningful relief for one in three patients, and all of the current market-leading drugs have serious side effects, as well as taking up to three weeks to begin to take effect.”

Peptides (small proteins) from cone snail venom have attracted recent attention from scientists, as they can target receptors with a high degree

of accuracy, thus eliminating severe side effects.

But peptides also degrade rapidly in the body. Professor Craik and Dr Clark have overcome this problem by engineering a circular peptide, using a circular protein backbone discovered by Professor Craik and found in plants such as violets.

The NHMRC Development grant will allow the researchers to further test their molecule to fully establish its therapeutic potential.

“Successful outcomes from this project will provide additional confirmation of the suitability of our molecule as a treatment for neuropathic pain,” Dr Clark said.

“Armed with these data, we will be able to secure a commercial partner and develop this molecule into a tablet for sufferers of chronic pain.”

Source: University of Queensland

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