Centipede venom component could treat pain

1 October 2013

Australian and Chinese researchers have identified a molecule in centipede venom with the potential to be developed into a painkiller as effective as morphine.

Researchers from The University of Queensland and the Chinese Academy of Sciences studied the venom of the Chinese red-headed centipede in an effort to find better solutions for the 20 per cent of the population who suffer from chronic pain.

Professor Glenn King, from UQ ' s Institute for Molecular Bioscience, said the molecule they found blocked the Nav1.7 channel in pain-sensing nerves.

" People without a functioning Nav1.7 channel cannot feel pain, so it ' s likely molecules that can block this channel will be powerful painkillers, " Professor King said.

" We recently demonstrated that the venom of the Chinese red-headed centipede was rich in molecules that can alter the function of nerve channels, so we decided to explore this venom to see if there was a molecule that could block Nav1.7."

" The molecule we found selectively targets this pain channel, which is crucial as closely related channels play critical roles in controlling the heart and muscles. "

Professor King said it was likely that centipedes had evolved the molecule to block similar nerve channels in insects in order to prey on them.

" There are a number of FDA-approved drugs derived from venom components currently on the market, with several more in clinical trials or various stages of preclinical development, " Professor King said.

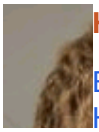
" Our study suggests that centipede venoms, which to date have been largely unstudied, might provide a new source of potential drugs for treating chronic pain and other conditions. "

According to a report by Access Economics, chronic pain cost Australia $34.3 billion through reduced productivity and health costs in 2007.

To donate to Professor King ' s pain research please visit www.imb.uq.edu.au/donate or call (07) 3346 2132.

Professor King is also involved in research that could lead to the development of an environmentally friendly insecticide harnessing toxin from Australian tarantula venom.

The Institute for Molecular Bioscience (IMB) is a research institute of The University of Queensland that aims to improve quality of life by advancing personalised medicine, drug discovery and biotechnology.



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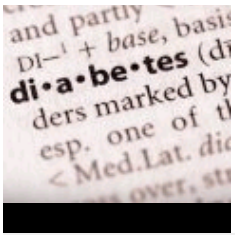

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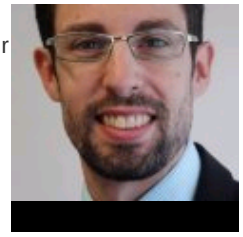

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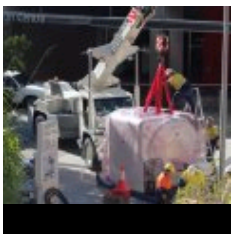

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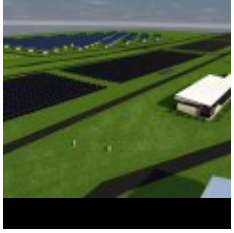

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