Attention: ■

06 March 2006

Taipan venom no snake oil

Australian snakes' venom could provide the next generation of human therapeutic drugs.

A blood-clotting protein in taipan venom has been identified by Queensland University of Technology PhD researcher Liam St Pierre to rapidly stop excessive bleeding during vascular surgery and major trauma.

The genetic code for the toxin, Factor X (Factor Ten), was identified by PhD researcher Liam St Pierre from QUT's School of Life Sciences who studied the venom of eight of Australia's deadliest land snakes for their therapeutic potential.

His study focussed on the genes in the coastal taipan's venom that are responsible for the pro coagulant or blood clotting agent called Factor X which could stem blood flow in a matter of seconds.

A drug lead based on Factor X is being evaluated for clinical trials by bio pharmaceutical development company QRxPharma.

"Australian snakes literally have a two-pronged attack when they bite their prey," Dr St Pierre said.

"Firstly, venom injection causes massive blood clots instantaneously followed by paralysis as a result of neurotoxins which eventually immobilise and kill the victim."

Dr St Pierre said mammals and snakes naturally produced a small amount of Factor X in their livers.

"Snakes produce a more stable and faster acting form of Factor X in their venom which is the only source of Factor X other than mammalian livers," he said.

"They have developed the ability to deliver massive fatal doses of Factor X to specifically target the systems of mammals."

Dr St Pierre studied the venom of the inland and coastal taipan, the common brown, the red bellied black, the mulga, the rough-scaled snake, Stephens banded snake and the tiger snake.

"Only the mulga did not have Factor X as it has developed its own unique mechanism of killing."

Dr St Pierre said snake venom was a huge untapped source of potential drug therapies.

His study is the most detailed ever conducted on the genes responsible for Australian snakes' toxins. It is hoped a comprehensive study of all the venom components from Australian snakes may yield further novel components that could be targeted as human drugs.

Dr St Pierre's work was co-supervised by Professor Martin Lavin at the Queensland Institute of Medical Research. Research into the components of Australian snake venoms is funded by a $1.5million ARC Linkage grant to UniQuest in collaboration with commercial partner, QRx Pharma.

Media contact: Niki Widdowson, QUT media officer, 07 3864 1841 or n.widdowson@qut.edu.au.
****High res pic of Dr St Pierre with a taipan being 'milked' of venom available.**