

Human hazards hamper vampire bat venom research

January 15 2019



Credit: University of Queensland

Vampire bats could hold the key to new treatments for a range of serious medical problems, but researchers have hit a snag accessing the specimens needed to advance their work.

An international team led by The University of Queensland has found a new class of blood pressure-regulating [peptides](#) in the venom of the common vampire bat (*Diphylla ecaudata*).

UQ School of Biological Sciences researcher Associate Professor Bryan

Fry said the peptides could help revolutionise treatments for a wide range of conditions, including hypertension, [heart failure](#), kidney diseases and burns, but the research had been hampered by criminal activity at a Mexican field site.

"The peptides are mutated forms of the Calcitonin Gene Related Peptide (CGRP), used by our bodies to relax blood vessels," he said.

"The peptides from the bats are unusually selective in their mode of action, making them even more therapeutically useful than the CGRP, as they have fewer side-effects.

"This could potentially help doctors in the treatment of a range of disorders featuring heightened pressure in small [blood vessels](#), or may be able to improve blood flow to damaged or transplanted tissue such as skin grafts."

Associate Professor Fry said there was much more to be learned than feared from the unique but much maligned [vampire bats](#).



Associate Professor Fry said Monash University PhD student Rahini Kakumanu had used complex pharmacological analyses to tease out the unique characteristic of the vampire bat venom. Credit: University of Queensland

"This discovery is another example of why it's so important to broadly protect nature, since we can't predict where the next great biologically sourced [drug discovery](#) is going to come from," he said.

"Venomous animals around the world are under threat, even more so than most other threatened or endangered species, due to deliberate persecution driven by fear or misunderstanding."

Associate Professor Fry said his team was facing challenges accessing vampire bat specimens.

"We can't access our original field site in Mexico anymore, because we're told that region has been taken over by drug traffickers," he said.

"We'll have to find new field sites that are safe to work in, but once we do that we'll be on track to find new peptide variations and potential wonder drugs, helping improve and save lives."

The study is published in the journal *Toxins*.

More information: Rahini Kakumanu et al. Vampire Venom: Vasodilatory Mechanisms of Vampire Bat (*Desmodus rotundus*) Blood Feeding, *Toxins* (2019). [DOI: 10.3390/toxins11010026](https://doi.org/10.3390/toxins11010026)

Provided by University of Queensland

Citation: Human hazards hamper vampire bat venom research (2019, January 15) retrieved 14 June 2024 from <https://phys.org/news/2019-01-human-hazards-hamper-vampire-venom.html>

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