

Aussie scientists see life-saving potential in spider venom

July 16 2021



Funnel-web spiders are among the world's deadliest species.

A group of Australia-based scientists are looking to venom from a deadly native spider to actually save lives, by halting the harmful effects of heart attacks.

Researchers used venom from a type of funnel-web spider—among the world's deadliest species—in a drug they hope can soon be taken to [human trials](#).

So far the [experimental medicine](#) has only been lab-tested.

University of Queensland scientist Nathan Palpant said Friday the venom helped stop the body sending a "death signal" after a heart attack, which causes cells to die.

"After a heart attack, blood flow to the heart is reduced, resulting in a lack of oxygen to [heart muscle](#)," Palpant said.

"The lack of oxygen causes the cell environment to become acidic, which combine to send a message for heart cells to die.

"Despite decades of research, no one has been able to develop a drug that stops this death signal in heart cells, which is one of the reasons why [heart disease](#) continues to be the leading cause of death in the world."

The team has successfully used a protein from spider venom on beating human heart cells that were exposed to [heart-attack](#) stresses.

"The Hi1a protein from spider venom blocks acid-sensing ion channels in the heart, so the death message is blocked, cell death is reduced, and we see improved heart cell survival," Palpant said.

It is hoped the drug could help not only prevent heart damage and save lives, but improve the quality of donated hearts during transplants.

Previous research has indicated funnel-web spider venom may also be useful in curbing damage from strokes.

The University of Queensland said the team was aiming for [human clinical trials](#) for both stroke and heart disease "within two to three years".

The most recent research was published in the latest edition of the journal *Circulation*.

More information: Meredith A. Redd et al, Therapeutic Inhibition of Acid Sensing Ion Channel 1a Recovers Heart Function After Ischemia-Reperfusion Injury, *Circulation* (2021). [DOI: 10.1161/circulationaha.121.054360](#)

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Citation: Aussie scientists see life-saving potential in spider venom (2021, July 16) retrieved 10 May 2024 from <https://medicalxpress.com/news/2021-07-aussie-scientists-life-saving-potential-spider.html>

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