

Stroke drug from a deadly source

Snake venom, vampire bat saliva kill in the wild but may save lives, scientists say

By PATRICK KURP HOUSTON CHRONICLE

The mouths of vampire bats and Malaysian pit vipers are like potentially lethal chemistry sets, dispensing life-taking and life-saving substances.

The vampire bat, a native of Central and South America, feeds exclusively on blood. Its saliva contains a substance that stops the prey's blood from coagulating, so it flows freely.

Vampire bats need to consume at least two tablespoons of blood each day.

The viper, a native of Southeast Asia, also is equipped with a sophisticated hemotoxin, a chemical that kills prey by causing its blood to stop coagulating. When the viper bites a rat, the rat suffers a massive hemorrhage and quickly bleeds to death.

"These chemicals are very powerful and very complex, and the animals use them to survive. We are using them to help people survive strokes and lessen the damage they do," said Dr. David Chiu, a neurologist and medical director of the Eddy Scurlock Stroke Center at the Methodist Neurological Institute in Houston.

Chiu is chief of a clinical trial testing the effectiveness of the two venoms on patients who have suffered strokes, which happen when bloodflow to a region of the brain is obstructed. If enough time lapses without treatment, brain tissue dies and death results.

Strokes (most of which are caused by arterial blockage) are the No. 3 cause of death in the United States, killing almost 163,000 people each year. About 700,000 Americans suffer new or recurrent strokes annually.

The drugs Chiu is testing are for emergency use, not prevention of strokes. The sooner a stroke victim receives a powerful anticoagulant to open the obstruction and restore blood-

flow, the more likely the patient is to survive and suffer less disability.

"We can't waste time," Chiu said. "Time is brain."

From the clot-busting agent found in the saliva of vampire

bats, researchers have genetically engineered a medication called Desmoteplase. Development of this drug is especially exciting for Chiu because it can effectively be administered to a patient up to nine hours after the first symptoms of a stroke appear.

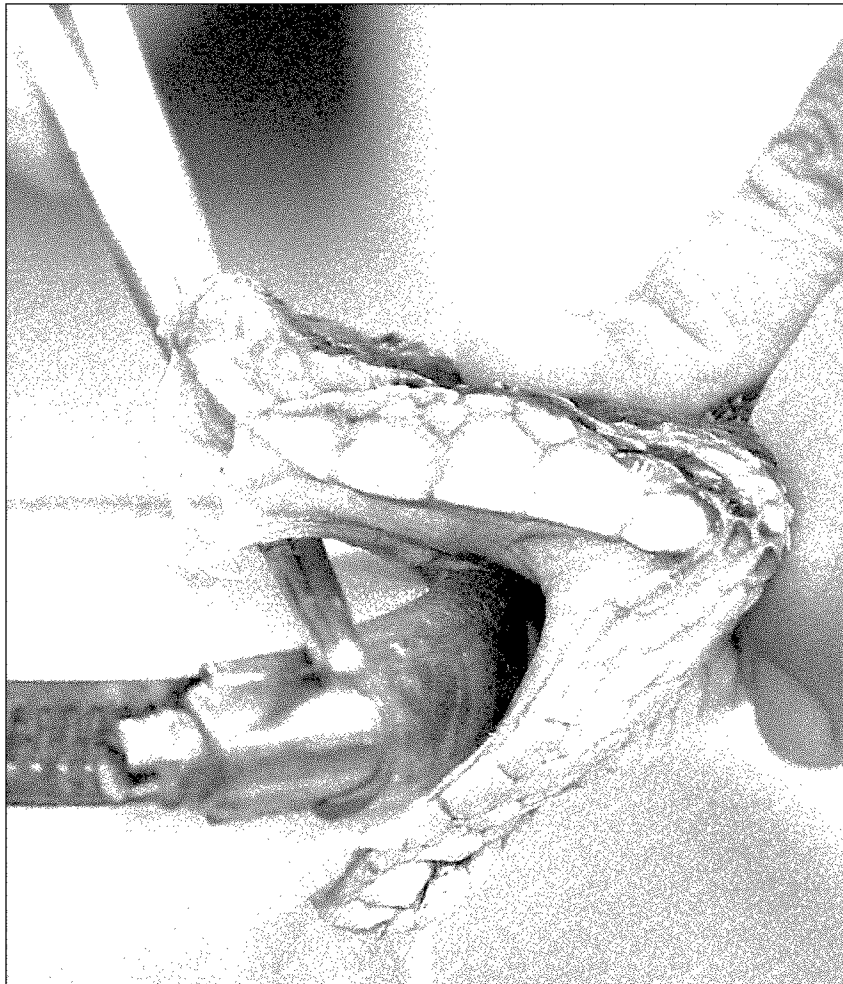
The other trial involves Viprinex, which is derived from a compound called ancrod found in the venom of the Malaysian pit viper. Chiu and his colleagues hope to determine if

ischemic stroke victims treated with a one-time dose of Viprinex will experience improved neurological function.

At present, the only clot-busting medication with U.S. Food and Drug Administration approval is t-PA (tissue plasminogen activator), but it must be administered within three hours of the first symptoms.

Chiu hopes to test the drugs on at least 1,000 patients, and expects the trials to last for at least two years. Both studies are random, double-blind, placebo-controlled clinical trials. For information, call 713-441-5801.

For questions or comments on the Environment, Science & Space page, contact matthew.schwartz@chron.com.



MARIANO MATAMOROS: ASSOCIATED PRESS FILE

NEW USE: Traditionally, this milking procedure is used to produce antivenom for snake-bite victims. But researchers find that poison from a certain Malaysian snake may help treat stroke patients. Dr. David Chiu, a Houston neurologist, has one clinical trial involving Viprinex.

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