Office of
Intellectual Property and Commercialization

Therapeutic Hypothermia

Summary

Dr. Kelly Drew's laboratory at the University of Alaska Fairbanks has developed a novel pharmacological adjunct of inducing therapeutic hypothermia that circumvents the problematic side effect of shivering to help medical professionals mitigate neurological damage in conscious patients following cerebral ischemia.

Problem

Therapeutic hypothermia is compromised by shivering in conscious patents

Stroke is the third leading cause of death in the United States with approximately 795,000 people suffering a stroke each year. Therapeutic hypothermia is the only neuroprotective treatment found in clinical trials to improve outcome following cerebral ischemia. However, although therapeutic hypothermia is becoming the standard of care for comatose patients after cardiac arrest, it has proven difficult to implement in stroke patients due to thermoregulatory defenses (i.e. shivering) in conscious patients.

Solution

Hypothermia sans shivering.

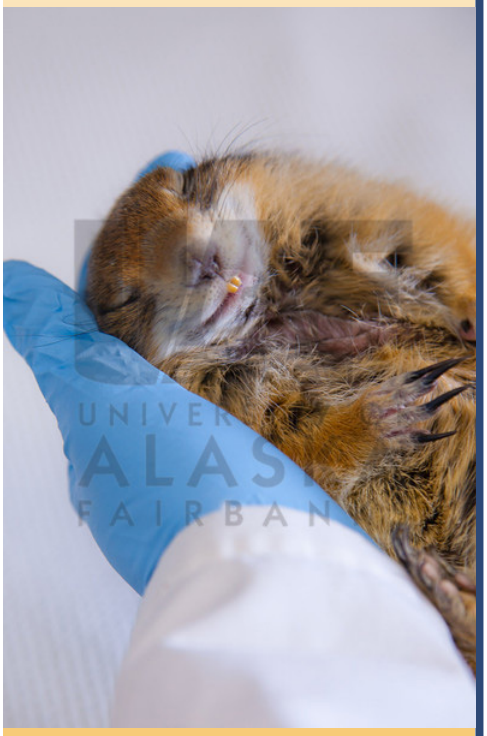
The novel method calls for the activation of adenosine A1 receptors (A1ARs) in the central nervous system combined with peripheral blocking of A1ARs allows for decreasing body temperature to 30-32˚C without shivering or other cardiovascular side effects.

Technology Readiness

The formulation is in the process of being patented. Further studies are being conducted in rats to show that the induced non-shivering hypothermia is neuroprotective in a stroke model. Support is needed to take the formulation to clinical trials.

Uses

- Neuroprotection after ischemic brain injury in conscious patients
- Mitigate brain injury after trauma
- Ease of cooling conscious patients in emergency ischemic situations
- Decrease/eliminate the need for bulky cooling devices



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