BIOACTIVE COMPOUNDS TO TREAT OR PREVENT NEURODEGENERATIVE DISEASES

Case Number: 15-103

APPLICATIONS

- Therapeutics to prevent or reduce the cerebral damage after an ischemic stroke

BACKGROUND

Worldwide mortality and disability rates due to cerebral ischemia (stroke) are significant, but therapeutic options continue to be limited. The only pharmacological treatment available following a stroke is thrombolytic therapy (tissue plasminogen activator or tPA), which can only be used if patients present themselves to a hospital within four hours of onset, which represents only 4% of patients. After four hours, the risks outweigh the benefits of tPA treatment. There is a need for additional pharmaceutical treatments to lessen cerebral damage immediately following an acute stroke and to expand the 4-hour therapeutic window for tPA treatment. These bioactive compounds have the potential to reduce cerebral damage following stroke and expand the therapeutic window of tPA.

TECHNOLOGY

UPEI-100, UPEI-200 and UPEI-300 are synthetic combinations of naturally-occurring bioactive compounds that are known to have potent antioxidant effects. All three formulations contain lipoic acid combined with another compound. These new compounds have been tested in rat models of reperfusion-injury following ischemia and demonstrated significant protection against cerebral damage. The results also indicate that if the compounds are taken with tPA following a stroke, then it may expand the therapeutic window for tPA therapy by 2 to 3 hours. Screening studies indicate that the efficacy of the synthetically combined compounds is significantly improved compared to taking the two separate compounds in combination. These compounds would be most beneficial if they are used in combination with tPA treatment, however, they can also potentially be used as part of a dietary supplement regimen to prevent stroke.

ADVANTAGE

- Significant dose reduction (10 to 1000 fold) compared to the individual compounds, which results in fewer side effects.

- Evidence in the rat model that these compounds extend the therapeutic window for typical post-thrombotic stroke therapy.

STAGE OF DEVELOPMENT

The three compounds have been tested in a validated rat model of ischemia-reperfusion injury (stroke).

PATENT PROTECTION

1. UPEI-100: US patent has been issued (US 2014/0315989 A1)
2. UPEI-200: A PCT Application has been filed (PCT/CA2014/051259)
3. UPEI-300: A PCT Application has been filed (PCT/CA2014/051261)

OPPORTUNITY

Licensing and/or Collaborative R&D