MicroRNA to Treat Traumatic Brain Injury

Tech ID: 34069 / UC Case 2018-053-0

ABSTRACT

Researchers at the University of California, Davis has developed a microRNA-based treatment for traumatic brain injury.

FULL DESCRIPTION

Traumatic Brain Injury (TBI) is a leading cause of death and disability worldwide. Although there are over 100 compounds shown to be effective experimentally, testing in human clinical trials has produced no new treatments. Due to compounds targeting individual genes, proteins, or enzymes, TBI continues to propagate via parallel pathways. Paired with inherent limitations of animal models, clinical trial designs, and TBI heterogeneity, more comprehensive forms of treatment are required.

Researchers at the University of California, Davis has developed a novel treatment for traumatic brain injury using a systematic tumor suppressing MicroRNA. This invention uses the concept that neuronal death in neurological diseases and tumor growth in cancer share the same mechanism – aberrant cell cycle re-entry. The treatment has been successfully tested in an adult rat TBI model to significantly: reduce bleeding, inhibit multiple oncogenes, block disruption of the blood brain barrier (BBB) and prevent neuronal death after TBI. This approach has the potential to treat TBI and other acute brain injuries (such as intracranial hemorrhage (ICH) and ischemic stroke) in humans.

APPLICATIONS

- Traumatic Brain Injury (TBI)
- Acute brain injuries such as intracranial hemorrhage (ICH) or ischemic stroke

FEATURES/BENEFITS

- Blocks blood brain barrier disruption and prevents neuronal death after TBI
- Systemic administration

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,667,920	06/06/2023	2018-053
Patent Cooperation Treaty	Published Application	2019/165267 A1	08/29/2019	2018-053

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OTHER INFORMATION

KEYWORDS

traumatic brain injury, TBI, oncogene, tumor suppressors, tumor suppression, microRNA, therapeutics, blood brain barrier, BBB, neuronal death

CATEGORIZED AS

- **Medical**
  - Disease: Central Nervous System
  - New Chemical Entities, Drug Leads
  - Therapeutics

RELATED CASES

2018-053-0

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