Potential Therapeutic Agent for Laminitis in Equines

Tech ID: 22572 / UC Case 2012-450-0

CONTACT

Amir J. Kallas
ajkallas@ucdavis.edu
tel: .



INVENTORS

- Guedes, Alonso G.P.
- Hammock, Bruce D.
- Morisseau, Christophe H.

OTHER INFORMATION

KEYWORDS

Equine, laminitis, pain, inflammation, therapeutic, NSAID

CATEGORIZED AS

- **Biotechnology**
  - Health
  - Other
- **Medical**
  - Therapeutics
- **Veterinary**
  - Large Animal
  - Therapeutics

RELATED CASES

2012-450-0

ABSTRACT

Small molecule drug compound demonstrated to resolve laminitis, and treat inflammation, inflammatory pain, and neuropathic pain in equines.

FULL DESCRIPTION

Laminitis is a complex disease in horses which is 60% fatal. It starts with inflammation and evolves into a complex disorder involving inflammatory and neuropathic pain, tissue destruction and morbid hypertension. The disorder is similar to severe arthritis in companion animals and man. Managing the acute inflammation and pain characteristic of the disease is difficult and no 'gold standard' of treatment has yet been developed. The problem is further compounded by the fact that NSAIDs, part of the standard treatment, has been shown to be of questionable benefit with neuropathic pain. Laminitis accounts for an average of 11.6 percent of all lameness problems[1] in the 9.2 million horses found in the United States[2]; further, 75% of horses with laminitis will often develop chronic challenges[3].

Researchers at the University of California, Davis have developed a small molecule drug compound with a novel mechanism of action that appears to prevent, reduce, inhibit, and reverse inflammation, inflammatory pain, and neuropathic pain in non-human animals. The compound has been shown to reduce and reverse laminitis in a horse slated for euthanasia due to its non-responsiveness to conventional treatment and its persistent recumbent position. The compound has low nanomolar potency, high oral availability, and good exposure and pharmacokinetics.

1. Laminitis and lameness in U.S. horses, National Animal Health Monitoring System 2000
2. 2005 – American Horse Council
3. Dr. Rustin Moore - OSU, Department of Veterinary Clinical Sciences "Understanding Laminitis" Webinar

APPLICATIONS

The compound can be used in horses and cattle for the treatment of:

- Laminitis
- Inflammation
- Inflammatory pain
- Neuropathic pain
- Pain or inflammation in combination with lower doses of NSAIDs, designed to increase analgesic effects and minimize the risks of side effects caused by higher doses of NSAIDs

FEATURES/BENEFITS

- Low nanomolar potency
- High oral availability
- Good exposure and pharmacokinetics
- Ability to treat neuropathic pain
- None of the unwanted adverse effects that occur with NSAIDs or opioids

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10/383,835	08/20/2019	2012-450

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Method of Preventing Bone Loss and Periodontal Disease
- Multi-Target Inhibitors for Pain Treatment
- Improved Dioxin Detection and Measurement
- Detection System for Small Molecules

- Small Molecule sEH Inhibitors to Treat Alpha-Synuclein Neurodegenerative Disorders
- Soluble Epoxide Hydrolase-Conditioned Stem Cells for Cardiac Cell-Based Therapy
- Targeting Cancer Cachexia with Soluble Epoxide Hydrolase Inhibitors
- Beneficial Effects of Novel Inhibitors of Soluble Epoxide Hydrolase as Adjuvant Treatment for Cardiac Cell-Based Therapy
- Antibodies: Bacillus Delta Endotoxin PAbs
- Antibodies: Bromacil Herbicide PAbs
- Novel Neuropathy Treatment Using Soluble Epoxide Inhibitors
- Novel and Specific Inhibitors of p21
- Antibodies for Pseudomonas (P.) aeruginosa
- Inhibitor for Preventing the Onset of Neurodevelopmental Disorders
- Antibodies: Urea Herbicide Pabs
- Bioavailable Dual sEH/PDE4 Inhibitor for Inflammatory Pain
- Methods of Improving Cancer Immunotherapy
- Chemical Synthesis of Lipid Mediator 22-HDoHE and Structural Analogs
- Antibodies: Triazine Herbicide Pabs
- Optimized Non-Addictive Biologics Targeting Sodium Channels Involved In Pain Signaling
- Soluble Epoxide Hydrolase Inhibitors For The Treatment Of Arrhythmogenic Cardiomyopathy And Related Diseases
- A New Pharmaceutical Therapy Target for Depression and Other Central Nervous System Diseases

University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel: 530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax: 530.754.7620

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