

A New Pharmaceutical Therapy Target for Depression and Other Central Nervous System Diseases

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ABSTRACT

Researchers at the University of California, Davis have discovered a new signal pathway involved in depression. This could be a potential target of pharmacological treatment of central nervous system disease and specially depression in man and companion animals. The technology could be best practiced with soluble epoxide hydrolase inhibitors, which have high oral bioavailability, good pharmacokinetics, picomolar potency, low toxicity and CNS activity.

FULL DESCRIPTION

Depression is a severe and chronic psychiatric disease, affecting 350 million subjects worldwide. Although antidepressants have been used in the treatment of depressive symptoms, their beneficial effects are limited.

Researchers at the University of California, Davis have discovered a new signal pathway involved in depression. Soluble epoxide hydrolase inhibitors have been shown to block the development and reverse the symptoms of severe depression in their different murine models. The target enzyme has been shown to be at high levels in human samples from psychiatric diseases including depression, bipolar disorder and schizophrenia. Inhibitors of this signal pathway have more rapid onset than other existing approved drugs, and do not have the side effects. Hence, this could be a new target of pharmacological treatment of central nervous system disease and specially depression in man and companion animals. Reduction of endoplasmic reticulum stress by stabilizing key chemical mediators appears to be the underlying mechanism. Histological studies in experimental animals and cadaveric human tissue indicate that the technology can be useful in preventing or treating diseases such as schizophrenia, Parkinson's disease, cognitive decline, and Alzheimer's disease.

APPLICATIONS

- ▶ Pharmaceutical therapy for central nervous system disease in human and animals

FEATURES/BENEFITS

- ▶ Don't have the side effects of existing approved drugs
- ▶ More rapid onset than the existing approved drugs

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,123,311	09/21/2021	2016-364
United States Of America	Published Application	2022020274	06/30/2022	2016-364

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OTHER INFORMATION

KEYWORDS

depression,
antidepressant, central nervous system disease, schizophrenia, Parkinson's, Alzheimer's, cognitive decline

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Health
- ▶ **Medical**
 - ▶ Disease: Central Nervous System
- ▶ **Veterinary**
 - ▶ Companion Animal

RELATED CASES

2016-364-0

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
- ▶ 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
- ▶ Antibodies: Urea Herbicide Pabs
- ▶ Bioavailable Dual sEH/PDE4 Inhibitor for Inflammatory Pain
- ▶ 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

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