Small Molecule sEH Inhibitors to Treat Alpha-Synuclein Neurodegenerative Disorders

Tech ID: 29327 / UC Case 2018-474-0

ABSTRACT

Researchers at the University of California, Davis have developed small molecule inhibitors to prevent or reverse the progression of neurodegenerative diseases or symptoms.

FULL DESCRIPTION

Current diagnosis of Parkinson's disease (PD), a chronic and progressive neurodegenerative disorder, has connections to the deposition of specific protein aggregates termed Lewy bodies. There are several PD symptoms commonly associated with these protein aggregates including palsy and dementia. Although there are multiple treatments for PD, these medications do not stop or reverse the progression of the disease.

Researchers at the University of California, Davis have developed soluble epoxide hydrolase (sEH) inhibitors for the treatment of neurodegenerative disorders. The inhibitors may block the phosphorylation of alpha-synuclein, which plays a key role in the pathogenesis of alpha-synuclein-related neurodegenerative diseases, reducing endoplasmic reticulum stress and possibly prevent the aggregation of Lewy bodies. The small molecule inhibitors are capable of preventing or reversing the progression of neurodegenerative diseases and symptoms.

APPLICATIONS

- Mitigating, delaying or preventing α-synuclein-related neurodegenerative disorders
  - Parkinson's disease, dementia, Alzheimer's, ALS, palsy, tramatic brain injury and neurodegeneration

FEATURES/BENEFITS

- Decreases inflammation associated with the pathogenesis of PD
- Reduces endoplasmic reticulum stress
- May have a role in preventing the aggregation of Lewy bodies

RELATED MATERIALS

- NIEHS - Enzyme plays key role in Parkinson's disease and inflammation - 06/01/2018
- Qian Ren, Min Ma, Jun Yang, Risa Nonaka, Akihiro Yamaguchi, Kei-ichi Ishikawa, Kenta Kobayashi, Shigeo Murayama, Sung Hee Hwang, Shinji Saiki, Wado Akamatsu, Nobutaka Hattori, Bruce D. Hammock, Kenji Hashimoto."Soluble epoxide hydrolase plays a key role in the pathogenesis of Parkinson's disease." Proceedings of the National Academy of Sciences. May 2018, 201802179; DOI: 10.1073/pnas.1802179115. - 05/07/2018

PATENT STATUS

CONTACT

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

INVENTORS

- Hammock, Bruce D.
- Hwang, Sung Hee

OTHER INFORMATION

KEYWORDS

small molecule, inhibitors, soluble epoxide hydrolase, sEH, alpha-synuclein, neurodegenerative disorders, parkinson's, lewy bodies, a-synuclein

CATEGORIZED AS

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

RELATED CASES

2018-474-0

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,251,379	03/18/2025	2018-474

Additional Patent Pending

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
- 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
- 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