Preparation of Furan Fatty Acids from 5-(Chloromethyl) Furfural

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CONTACT

Victor Haroldsen
haroldsen@ucdavis.edu
tel: 530-752-7717.

INVENTORS

- Chang, Fei
- Mascal, Mark J.

OTHER INFORMATION

KEYWORDS

5-(chloromethyl)furfural, CMF, biomass, furan fatty acids, FFA, antioxidant, natural products, cardiovascular

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Chemicals
  - Nutraceuticals
- **Biotechnology**
  - Health
  - Other
- **Medical**
  - Disease: Cardiovascular and Circulatory System
  - Other

ABSTRACT

Researchers at the University of California, Davis have developed a novel, efficient route to a new class of dietary supplements with antioxidant, anti-inflammatory, and possible cardioprotective properties.

FULL DESCRIPTION

Furan fatty acids (FFAs) have been chemically synthesized from the biomass-derived platform chemical 5 (chloromethyl)furfural (CMF). FFAs are a family of naturally occurring anti-inflammatory products which are proposed to have cardioprotective properties. Both in vitro and in vivo tests indicated that these molecules are potent antioxidants owing to their radical scavenging abilities. Due to the low natural abundance and harsh conditions involved in the isolation of FFAs, a number of synthetic approaches have been published. However, most of these are not industrially viable because of either lengthy routes, low yields, or costly procedures.

Researchers at the University of California Davis have developed a concise, efficient synthesis of FFAs from biomass-derived CMF with an overall 52% yield. The method, which uses CMF, features industrially relevant, high-yielding reactions and short reaction times in each step of synthesis. This methodology can be expanded to include natural FFAs with different chain lengths.

APPLICATIONS

Production of FFA for use as dietary supplement

FEATURES/BENEFITS

- CMF, a renewable platform chemical, was used as the starting material of this synthesis
- High yields were obtained in each step of this synthesis
- Short reaction times and convenient purification procedures

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,399,953	09/03/2019	2015-621
Patent Cooperation Treaty	Reference for National Filings	WO 2023/250486	12/28/2023	2015-621

Additional Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Synthetic, Non-Scheduled, Cannabinoid for Reducing the Frequency and Severity of Seizure

RELATED CASES

2015-621-0

- Cannabigerol (CBG) In The Treatment Of Seizures And Epilepsy
- Process for Converting Waste Biomass

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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