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Edible Oils to Enhance the Absorption of Orally Administered Steroids Including Neurosteroids

Tech ID: 23880 / UC Case 2012-017-0

ABSTRACT

Researchers at the University of California, Davis have developed a formulation of steroids, including neurosteroids in edible oils to enhance their absorption orally or transmucosally.

FULL DESCRIPTION

Steroids, including neurosteroids (e.g., allopregnanolone) are highly insoluble in aqueous solution. Various approaches currently used to enhance aqueous dissolution, including the use of cyclodextrin solutions and nanosizing are not sufficiently effective in permitting oral delivery for the treatment of medical conditions where neurosteroids are used. For instance, many cyclodextrins are associated with poor solubility, while nanoparticle methods are associated with highly variable absorption of the drug and is dependent on dosing with or without a fatty meal. . There is presently no acceptable approach for the oral delivery of neurosteroids. Therefore, this invention solves an important unmet medical need.

Researchers at University of California, Davis have discovered that edible oils, markedly enhance the absorption of the neurosteroid allopregnanolone delivered by the oral route. Suspending or dissolving allopregnanolone in an edible oil represents a practical way of administering neurosteroids to patients. The invention provides for compositions comprising a steroid and an edible oil and covers formulations that can be used for oral and mucosal delivery of neurosteroids.

APPLICATIONS

- ▶ Administration of neurosteroids (e.g. allopregnanolone) by oral or intramucosal delivery
- ▶ Treatment of traumatic brain injury, Alzheimer's disease, epilepsy, anxiety, fragile X syndrome, posttraumatic stress disorder, lysosomal storage disorders (including Niemann-Pick type C disease), depression (including postpartum depression), premenstrual dysphoric disorder, alcohol craving, and for smoking cessation

FEATURES/BENEFITS

- ▶ Avoids toxic effects associated with parenteral neurosteroid formulations with certain cyclodextrins
- ▶ Superior bioavailability of neurosteroids permits lower doses to be used compared to aqueous formulations
- ▶ Permits various oral delivery formulations including hard or soft capsules and formulations for transmucosal delivery

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,478,505	11/19/2019	2012-017

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Cannabigerol \(CBG\) In The Treatment Of Seizures And Epilepsy](#)

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OTHER INFORMATION

CATEGORIZED AS

- ▶ **Agriculture & Animal Science**
 - ▶ Nutraceuticals
- ▶ **Biotechnology**
 - ▶ Food
 - ▶ Health
- ▶ **Medical**
 - ▶ Delivery Systems
 - ▶ Therapeutics

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