

# Marijuana Summit 2019 Hawaii

Developing an effective  
enforcement strategy for the  
Medical Use of Cannabis in Hawaii

Clifton Otto, MD  
March 28, 2019

# Thanks to our Sponsors



# Disclosures

Written Certifications for patients who wish to register with Hawaii's Medical Use of Cannabis Program in accordance with state law.

NOT a member or consultant with any dispensary.

No financial interests to disclose.

# Disclaimer

This presentation is for educational purposes only.

I am not a lawyer, just a fan of the rule of law.

Please consult with a lawyer for professional legal advice regarding the medical use of cannabis in Hawaii.

# My Background



Akamai Cannabis Clinic  
Certifying Physician, since 2013  
Board-certified in Cannabis Medicine  
Member of the Dispensary Task Force

Retina Institute of Hawaii  
Medical Retina Specialist, Since 2007

Wyeth-Ayerst Pharmaceuticals  
Reference Standard Chemist, 1994-1995

University of Hawaii at Manoa  
Natural Products Chemist, 1992-1994

<http://www.cannabishealthcarehawaii.com/drotto>

# Friend with colorectal cancer ...

Pain relief

Nausea  
reduction

Appetite  
stimulation



# First I looked at the Science ...

## Cannabidiol as a novel inhibitor of Id-1 gene expression in aggressive breast cancer cells

Sean D. McAllister, Rigel T. Christian,  
Maxx P. Horowitz, Amaia Garcia,  
and Pierre-

California Pacific Medical Center, Research Institute,  
San Francisco, California

## Cannabinoids in bipolar affective disorder: a review and discussion of their therapeutic potential

7]

C. H. Ashton *Department of Psychiatry, University of Newcastle upon Tyne, Royal Victoria Infirmary, Newcastle*

## Cannabidiol Arrests Onset of Autoimmune Diabetes in NOD Mice

Lola Weiss<sup>1,\*</sup>, Michael Zeira<sup>1</sup>, Shoshana Reich<sup>1</sup>, Shimon Slavin<sup>1</sup>, Itamar Raz<sup>2</sup>, Raphael Mechoulam<sup>3</sup>, and Ruth Gallily<sup>4</sup>

*1 Department of Bone Marrow Transplantation & Cancer Immunotherapy Hadassah Hebrew University Hospital*

# Then I studied the law ...

## Hawaii's Medical Use of Marijuana Act



Governor Ben Cayetano

Senate Bill 862  
HRS 329, Section IX

Signed into law:  
June 14, 2000

Went into effect:  
December 28, 2000



# Patient Advocacy



Recreationalists

Prohibitionists

Cannabis Fanatics

# Cannabis Acute Psychosis

**BMC Psychiatry**



Case report

Open Access

## **Two cases of "cannabis acute psychosis" following the administration of oral cannabis**

Bernard Favrat\*<sup>1</sup>, Annick Ménétrety<sup>2</sup>, Marc Augsburger<sup>2</sup>, Laura E Rothuizen<sup>3</sup>, Monique Appenzeller<sup>3</sup>, Thierry Buclin<sup>3</sup>, Marie Pin<sup>1</sup>, Patrice Mangin<sup>2</sup> and Christian Giroud<sup>2</sup>

Address: <sup>1</sup>Unité de Médecine du Trafic, Institut Universitaire de Médecine Légale (IUML), 1005 Lausanne, Switzerland, <sup>2</sup>Laboratoire de Toxicologie et Chimie Forensiques (LTCF), Institut Universitaire de Médecine Légale (IUML), Rue du Bugnon 21, 1005 Lausanne, Switzerland and <sup>3</sup>Division de pharmacologie et toxicologie cliniques, CHUV, 1011 Lausanne, Switzerland

Email: Bernard Favrat\* - [bernard.favrat@hospvd.ch](mailto:bernard.favrat@hospvd.ch); Annick Ménétrety - [amenetrey@debio.com](mailto:amenetrey@debio.com); Marc Augsburger - [Marc.Augsburger@hospvd.ch](mailto:Marc.Augsburger@hospvd.ch); Laura E Rothuizen - [Laura.Rothuizen@hospvd.ch](mailto:Laura.Rothuizen@hospvd.ch); Monique Appenzeller - [Monique.Appenzeller@chuv.hospvd.ch](mailto:Monique.Appenzeller@chuv.hospvd.ch); Thierry Buclin - [Thierry.Buclin@chuv.hospvd.ch](mailto:Thierry.Buclin@chuv.hospvd.ch); Marie Pin - [Marie.Pin@hospvd.ch](mailto:Marie.Pin@hospvd.ch); Patrice Mangin - [Patrice.Mangin@hospvd.ch](mailto:Patrice.Mangin@hospvd.ch); Christian Giroud - [Christian.Giroud@hospvd.ch](mailto:Christian.Giroud@hospvd.ch)

\* Corresponding author

<https://bmcp psychiatry.biomedcentral.com/track/pdf/10.1186/1471-244X-5-17>

# Outline

State Medical Use

Certification Standards

Cannabidiol

# State Medical Use



# “Medical Cannabis”



# Proper Terminology

Medical Use of Cannabis  
Medical Use Cannabis

Chapter 329  
Uniform Controlled Substances Act  
Part IX. Medical Use of Cannabis  
Sections 121-128

# For your consideration

A substance cannot be controlled...



...if the state and federal regulation of that substance are misaligned

# Federal Schedule I Criteria



U.S. DEPARTMENT OF JUSTICE ★ DRUG ENFORCEMENT ADMINISTRATION  
**DIVERSION CONTROL DIVISION**

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RESOURCES > Title 21 USC Codified CSA > Section 812

**Title 21 United States Code (USC) Controlled Substances Act**

Get Email Updates: 

## **§812. Schedules of controlled substances**

### **(b) Placement on schedules; findings required**

#### **(1) Schedule I.—**

(A) The drug or other substance has a high potential for abuse.

(B) The drug or other substance has no currently accepted medical use in treatment in the United States.

(C) There is a lack of accepted safety for use of the drug or other substance under medical supervision.

<https://www.deaiversion.usdoj.gov/21cfr/21usc/812.htm>



# Federal Schedule I List



U.S. DEPARTMENT OF JUSTICE ★ DRUG ENFORCEMENT ADMINISTRATION  
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RESOURCES > Title 21 Code of Federal Regulations > 1308 > 1308.11

## Title 21 Code of Federal Regulations

### PART 1308 — SCHEDULES OF CONTROLLED SUBSTANCES

#### §1308.11 Schedule I.

(d) *Hallucinogenic substances.*

(23) Marihuana

(31) Tetrahydrocannabinols

(58) Marihuana Extract

[https://www.deadiversion.usdoj.gov/21cfr/cfr/1308/1308\\_11.htm](https://www.deadiversion.usdoj.gov/21cfr/cfr/1308/1308_11.htm)

# State Schedule I Criteria

**§329-13 Schedule I tests.** A substance shall be placed in schedule I if it has the highest degree of danger or probable danger according to the determination made pursuant to section 329-11.

# State Schedule I List

**§329-14 Schedule I.** (a) The controlled substances listed in this section are included in schedule I.

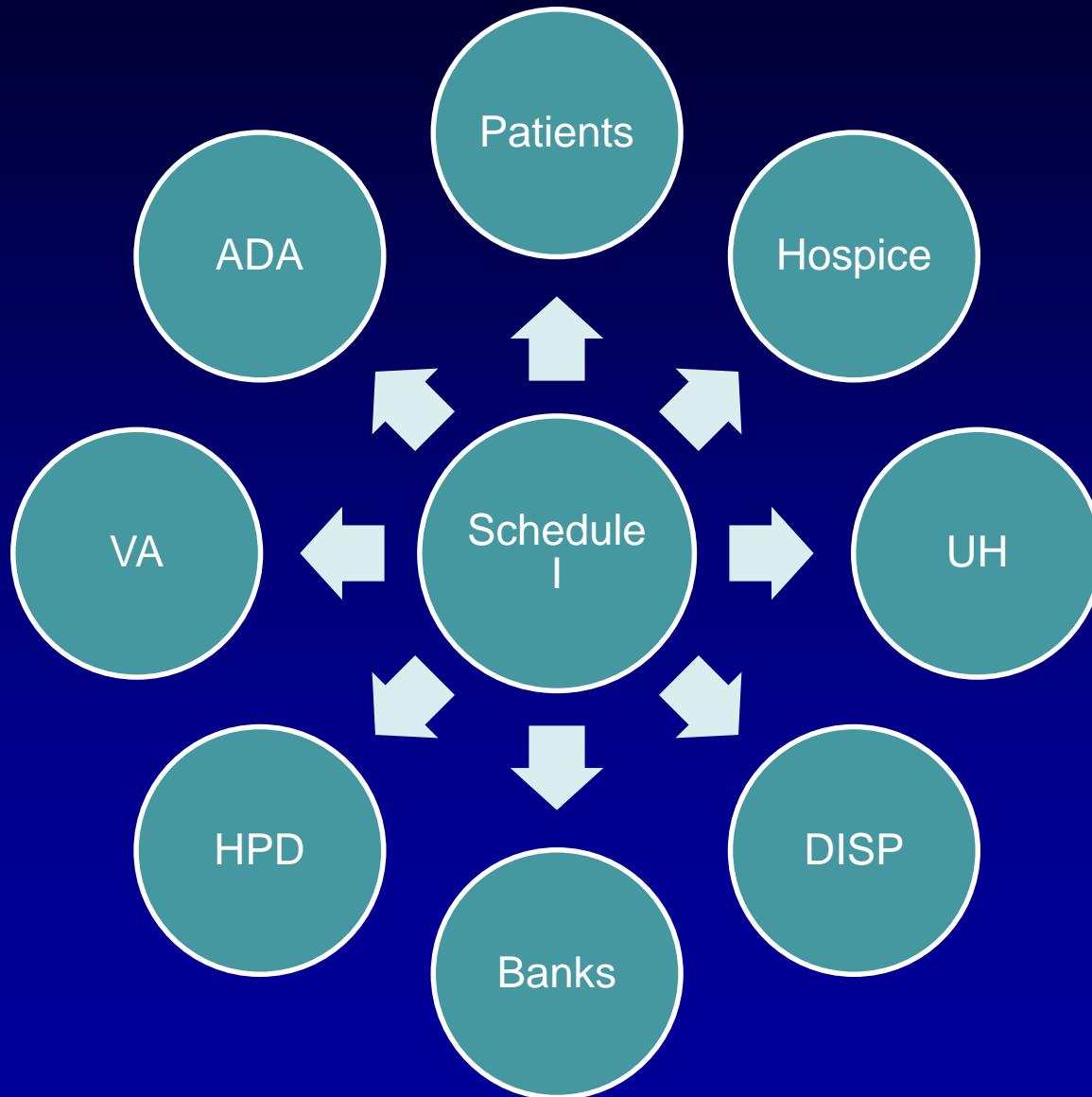
(d) Any material, compound, mixture, or preparation that contains any quantity of the following hallucinogenic substances...

(20) Marijuana;

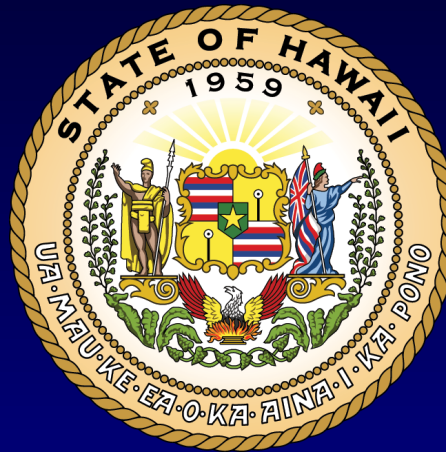
(g) Any of the following cannabinoids

(1) Tetrahydrocannabinols

# Unintended Consequences

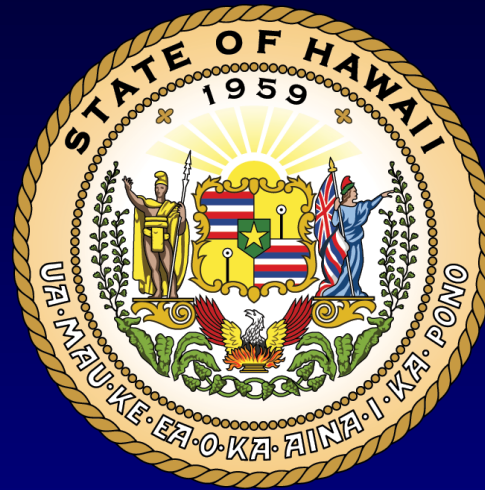


# Federalism



States hold the authority  
to accept the  
medical use of  
controlled substances

# Federalism



State medical use is currently accepted medical use in treatment in the United States.

# Types of Accepted Medical Use

FDA-approved

State-accepted

Grandfathered

<https://www.medicaljane.com/2016/10/17/the-accepted-medical-use-of-marijuana-states-need-to-take-action-now-to-protect-patient-rights/>

# State Medical Use Argument

## Point #1

The federal Controlled Substances Act (CSA) says that a substance cannot be in federal Schedule I if it has "currently accepted medical use in treatment in the United States". (See [21 U.S.C. 812. Schedules of Controlled Substances](#), (b) Placement on schedules; findings required, (1) Schedule I, (B) The drug or other substance has no currently accepted medical use in treatment in the United States.)



# State Medical Use Argument

## Point #2

The courts have acknowledged that Congress never defined the term "currently accepted medical use", which leaves it to the states to determine what constitutes accepted medical use in their state. (See [ACT v. DEA, 930 F.2d 936,936 \(D.C. Cir. 1991\)](#): Neither the statute nor its legislative history precisely defines the term "currently accepted medical use".)

# State Medical Use Argument

## Point #3

The courts have acknowledged that having medical use in just one state is sufficient for there to be medical use in the United States.

(See [Grinspoon v. DEA, 828 F.2d 881,886 \(1st Cir. 1987\)](#) Congress did not intend "accepted medical use in treatment in the United States" to require a finding of recognized medical use in every state.)

# State Medical Use Argument

## Point #4

The Supreme Court has acknowledged that the decision-making authority to accept the medical use of controlled substances is reserved to the states. (See [Gonzales v. Oregon \(2006\)](#)) The Attorney General has rulemaking power to fulfill his duties under the CSA. The specific respects in which he is authorized to make rules, however, instruct us that he is not authorized to make a rule declaring illegitimate a medical standard of care and treatment of patients that is specifically authorized under state law.)

# State Medical Use Argument

## Point #5

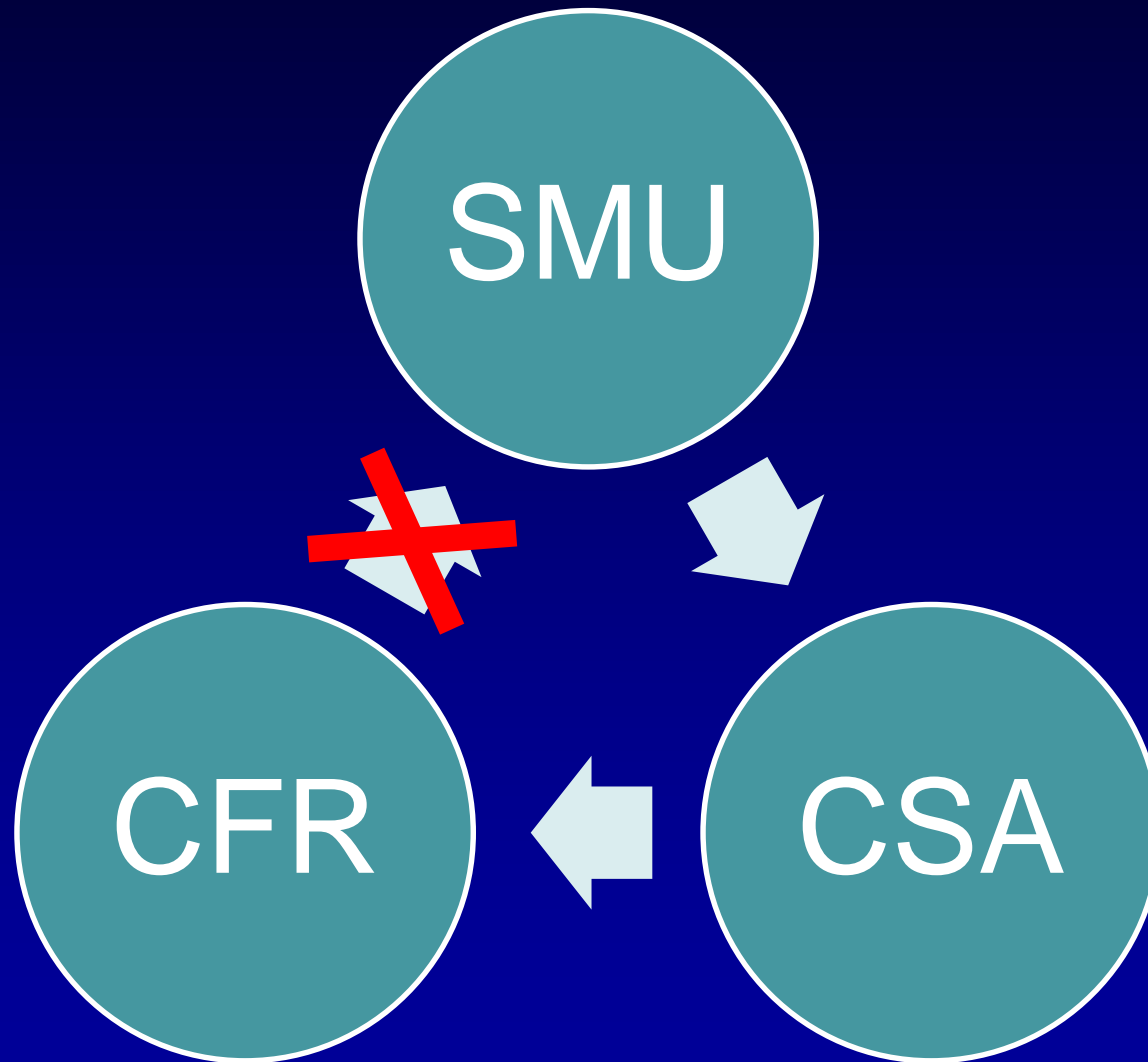
The State of Hawaii exercised its authority to accept the medical use of a controlled substance when it established that cannabis has medical use by enacting Hawaii's Medical Use of Cannabis Act in 2000, thereby creating a state-regulated medical use of cannabis program. (See Hawaii's Uniform Controlled Substances Act, [HRS 329, Part IX. Medical Use of Cannabis.](#))

# State Medical Use Argument

## Point #6

State medical use of cannabis is “currently accepted medical use in treatment in the United States”, which means that the federal regulation that places marijuana in federal Schedule I “**does not apply**” to the medical use of cannabis in Hawaii. ([See 21 CFR 1308.11 Schedule I. \(d\)](#) Hallucinogenic substances. (23) Marihuana and (31) Tetrahydrocannabinols.)

# State Medical Use Argument



# Does Not Apply

## Exempt from federal Schedule I:

21 CFR 1307.31 - Native American Church.

“The listing of peyote as a controlled substance in Schedule I **does not apply** to the nondrug use of peyote in bona fide religious ceremonies of the Native American Church, and members of the Native American Church so using peyote are exempt from registration.”

# Does Not Apply

## Exempt from Guam Schedule I:

Section 2. The following *new* subsection (g) is added to Appendix A of Chapter 67 of Title 9 Guam Code Annotated, to read as follows:

“(g) The enumeration of marihuana, tetrahydrocannabinols or chemical derivatives of these as Schedule I controlled substances **does not apply** to the medical use of cannabis pursuant to the Joaquin Concepcion Compassionate Cannabis Use Act of 2013.”



# Does Not Apply

## Exempt from aircraft carriage restrictions:

14 CFR 91.19 Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances.

(b) Paragraph (a) of this section **does not apply** to any carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances authorized by or under any Federal or State statute or by any Federal or State agency.”

# Trivia Question

Why does our local newspaper use the term “legalized medical cannabis” rather than the more accurate term “accepted the medical use of cannabis” ?

# Trivia Question

Why does our local newspaper use the term “legalized medical cannabis” rather than the more accurate term “accepted the medical use of cannabis” ?

Because the Associated Press’ stylebook doesn’t contain the term “accepted the medical use of cannabis”.

# AP Stylebook

AP

| Search APStylebook.com

SPIRAL-BOUND BOOK, UPDATED EACH SPRING

## 2018 AP Stylebook

The classic spiral-bound edition is published each spring. The 2018 edition of The Associated Press Stylebook and Briefing on Media Law includes about 200 new or revised entries, with chapters covering business, fashion, food, religion and sports terms, as well as media law, news values, punctuation, social media use and a new polls and surveys chapter. ISBN: 978-0-917360-67-1.

LEARN MORE

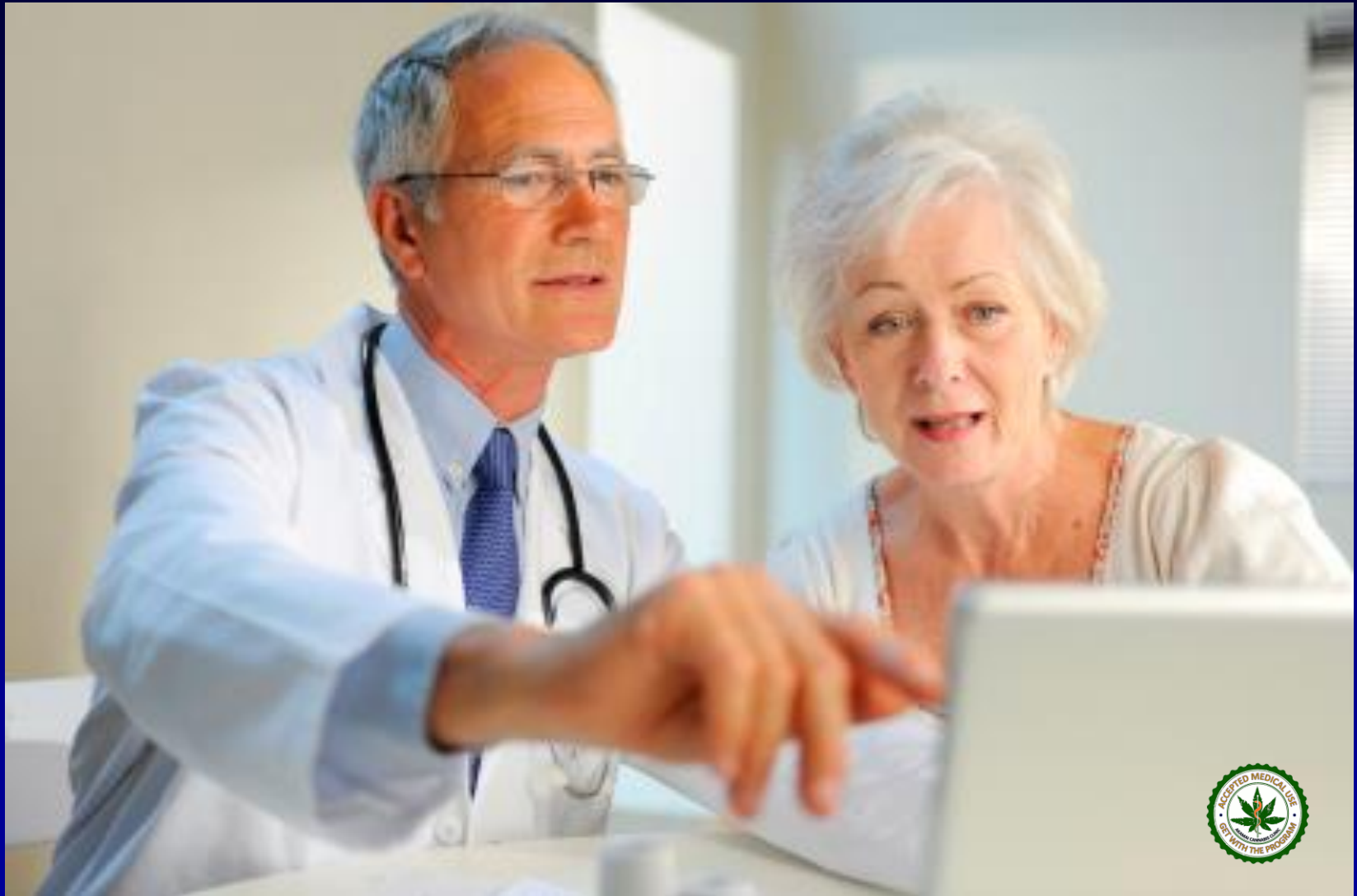


<https://www.apstylebook.com/>

# Certification Standards



# Certification Standards



# Certification Standards



## Model Guidelines for the Recommendation of Marijuana in Patient Care

*Report of the FSMB Workgroup on Marijuana and Medical Regulation*

*Adopted as policy by the Federation of State Medical Boards  
April 2016*

***Physician Conflicts of Interest:*** A physician who recommends marijuana should not have a professional office located at a dispensary or cultivation center or receive financial compensation from or hold a financial interest in a dispensary or cultivation center. Nor should the physician be a director, officer, member, incorporator, agent, employee, or retailer of a dispensary or cultivation center.

# Certification Standards

## Medical Board of California's Guidelines for the Recommendation of Cannabis for Medical Purposes April 2018

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*Adopted October 27, 2017, revision adopted April 20, 2018.*

### **PREAMBLE**

The Medical Board of California (Board) developed these guidelines since cannabis is a permissible treatment modality in California under qualifying circumstances. The Board wants to assure physicians who choose to recommend cannabis for medical purposes to their patients, as part of their regular practice of medicine, that they will not be subject to investigation or disciplinary action by the Board if they arrive at the decision to make this recommendation in accordance with accepted standards of medical responsibility. The mere receipt of a complaint that the physician is recommending cannabis for medical purposes will not generate an investigation absent additional information indicating that the physician is not adhering to accepted medical standards.

[https://www.mbc.ca.gov/Publications/guidelines\\_cannabis\\_recommendation.pdf](https://www.mbc.ca.gov/Publications/guidelines_cannabis_recommendation.pdf)



# Board Certification



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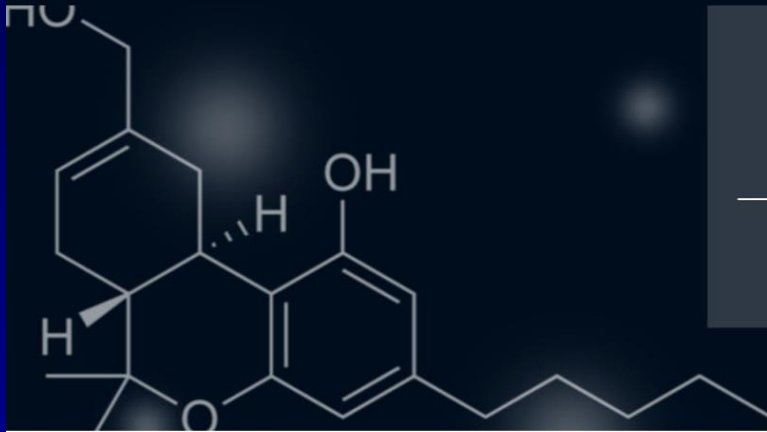
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# AACM

## American Academy of Cannabinoid Medicine

*Promoting high ethical and practice standards  
in the clinical application of cannabis and cannabinoids*

<http://aacmsite.org/>

# Cole Memos



# Cole Memos



U.S. Department of Justice


Office of the Deputy Attorney General

The Deputy Attorney General

Washington, D.C. 20530

August 29, 2013

MEMORANDUM FOR ALL UNITED STATES ATTORNEYS

FROM: James M. Cole   
Deputy Attorney General


SUBJECT: Guidance Regarding Marijuana Enforcement

The Department's guidance in this memorandum rests on its expectation that states and local governments that have enacted laws authorizing marijuana-related conduct will implement **strong and effective regulatory systems** that will address the threat those state laws could pose to public safety, public health, and other law enforcement interests.

<https://www.justice.gov/iso/opa/resources/3052013829132756857467.pdf>

# New Registration Cards

**State of Hawaii 329 Medical Cannabis**



Registration Number: \_\_\_\_\_

Start Date: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

**WAY TOO**

Patient Last Name: \_\_\_\_\_

First, Middle, Suffix: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

**EASY TO**

Caregiver Last Name: \_\_\_\_\_

First, Middle, Suffix: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

**MODIFY**

Physician/APRN Name: /s/ \_\_\_\_\_

# Registration Card Changes

Generate the registration card the instant that certification and registration are submitted online to DOH.

Email copies of the Written Certification and registration card directly to the certifying provider.

Have the provider print, sign, and laminate the registration card and give to the patient.

# Transparency Needed



# Cannabidiol (CBD)



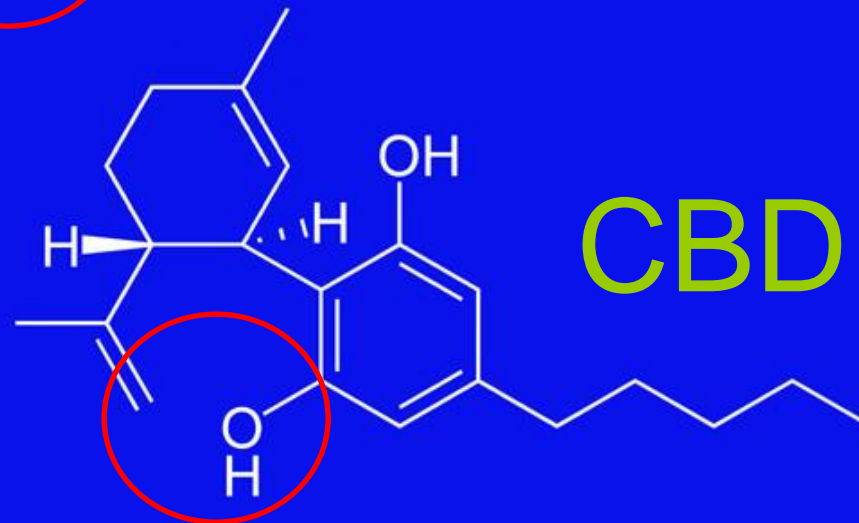
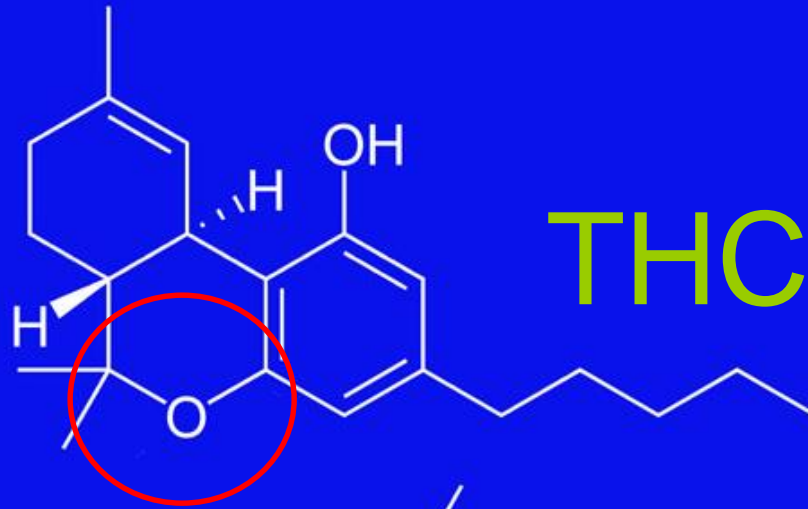
# CBD



Anti-inflammatory  
Anti-spasmodic, Anti-convulsive  
Anti-oxidant, neuroprotective, cardioprotective  
Anti-neoplastic  
Anti-diabetic



# CBD vs. THC



# Agriculture Act of 2014

## H.R.2642 - Agricultural Act of 2014

113th Congress (2013-2014)

February 7, 2014

LAW

Hide Overview ✕

**Sponsor:** [Rep. Lucas, Frank D. \[R-OK-3\]](#) (Introduced 07/10/2013)

**Committees:** House - Agriculture

**Committee Reports:** [H. Rept. 113-333 \(Conference Report\)](#)

**Latest Action:** 02/07/2014 Became Public Law No: 113-79. ([TXT](#) | [PDF](#)) ([All Actions](#))

**Roll Call Votes:** There have been [8 roll call votes](#)

### Tracker:

Introduced > Passed House > Passed Senate > Resolving Differences > To President > **Became Law**

**Summary (2)**

Text (7)

Actions (70)

Titles (11)

Amendments (0)

Cosponsors (0)

Committees (1)

Related Bills (14)

Did not remove hemp from the federal CSA.  
Provided only for cultivation and marketing research.

<https://www.congress.gov/bill/113th-congress/house-bill/2642>

# Research Pilot Programs



**FEDERAL REGISTER**

The Daily Journal of the United States Government



1

Notice

Statement of Principles on Industrial Hemp

August 12, 2016

A Notice by the Agriculture Department, the Drug Enforcement Administration, and the Food and Drug Administration on 08/12/2016



The term “industrial hemp” includes the plant *Cannabis sativa* L. and any part or derivative of such plant, including seeds of such plant, whether growing or not, that is used **exclusively for industrial purposes** (fiber and seed) with a tetrahydrocannabinols concentration of not more than 0.3 percent on a dry weight basis.

<https://www.federalregister.gov/documents/2016/08/12/2016-19146/statement-of-principles-on-industrial-hemp>

# Research Pilot Programs



**FEDERAL REGISTER**

The Daily Journal of the United States Government



2

Notice

Statement of Principles on Industrial Hemp

August 12, 2016

A Notice by the Agriculture Department, the Drug Enforcement Administration, and the Food and Drug Administration on 08/12/2016



For purposes of marketing research by institutions of higher education or State departments of agriculture (including distribution of marketing materials), but **not for the purpose of general commercial activity**, industrial hemp products may be sold in a State with an agricultural pilot program or among States with agricultural pilot programs ...

<https://www.federalregister.gov/documents/2016/08/12/2016-19146/statement-of-principles-on-industrial-hemp>

# Epidiolex



<https://www.federalregister.gov/documents/2016/08/12/2016-19146/statement-of-principles-on-industrial-hemp>

# Epidiolex



U.S. Department of Health and Human Services



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### FDA News Release

# FDA approves first drug comprised of an active ingredient derived from marijuana to treat rare, severe forms of epilepsy

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**For Immediate  
Release**

June 25, 2018

June 25, 2018

<https://www.fda.gov/newsevents/newsroom/pressannouncements/ucm611046.htm>

# Epidiolex



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United States Drug Enforcement  
Administration

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**Drug Enforcement  
Administration**

DEA Headquarters

[@DEAHQ](#)

September 27, 2018

**Contact:** National Media Affairs Office

**Phone Number:** (202) 307-1000

FOR IMMEDIATE RELEASE

September 27, 2018

## FDA-approved drug Epidiolex placed in schedule V of Controlled Substance Act

**WASHINGTON** - The Department of Justice and Drug Enforcement Administration today announced that Epidiolex, the newly approved medication by the Food & Drug Administration, is being placed in schedule V of the Controlled Substances Act, the least restrictive schedule of the CSA.

In June 2018, the FDA announced it approved Epidiolex for the treatment of seizures associated with two rare and severe forms of epilepsy, Lennox-Gastaut syndrome and Dravet syndrome, in patients two years of age and older.

<https://www.dea.gov/press-releases/2018/09/27/fda-approved-drug-epidiolex-placed-schedule-v-controlled-substance-act>

# FDA and CBD



U.S. Department of Health and Human Services

National Institutes of Health



National Center for  
Complementary and  
Integrative Health

*NIH...Turning Discovery Into Health*

Health Info

Research

Grants & Funding

Training

## Marijuana and Cannabinoids

The FDA has determined that it is not legal to sell products that contain THC or CBD as dietary supplements. It is also not legal to sell foods containing added THC or CBD in interstate commerce.

<https://nccih.nih.gov/health/marijuana>



# FDA and CBD



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## FDA and Marijuana: Questions and Answers

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FDA has therefore concluded that it is a prohibited act to introduce or deliver for introduction into interstate commerce any food (including any animal food or feed) to which THC or CBD has been added.

<https://www.fda.gov/NewsEvents/PublicHealthFocus/ucm421168.htm#legal>

# Agriculture Improvement Act of 2018

429

**SEC. 10113. HEMP PRODUCTION.**

*The Agricultural Marketing Act of 1946 (7 U.S.C. 1621 et seq.)  
is amended by adding at the end the following:*

***“Subtitle G—Hemp Production***

**“SEC. 297A. DEFINITIONS.**

*“In this subtitle:*

*“(1) HEMP.—The term ‘hemp’ means the plant *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.*

December 20, 2018

Removed hemp from the federal CSA.  
Authorized the USDA to approve state hemp programs.

# Agriculture Improvement Act of 2018

**SEC. 10113. HEMP PRODUCTION.** The Agricultural Marketing Act of 1946 (7 U.S.C. 1621 et seq.) is amended by adding at the end the following: “**Subtitle G—Hemp Production**

“SEC. 297D. REGULATIONS AND GUIDELINES; EFFECT ON OTHER LAW.

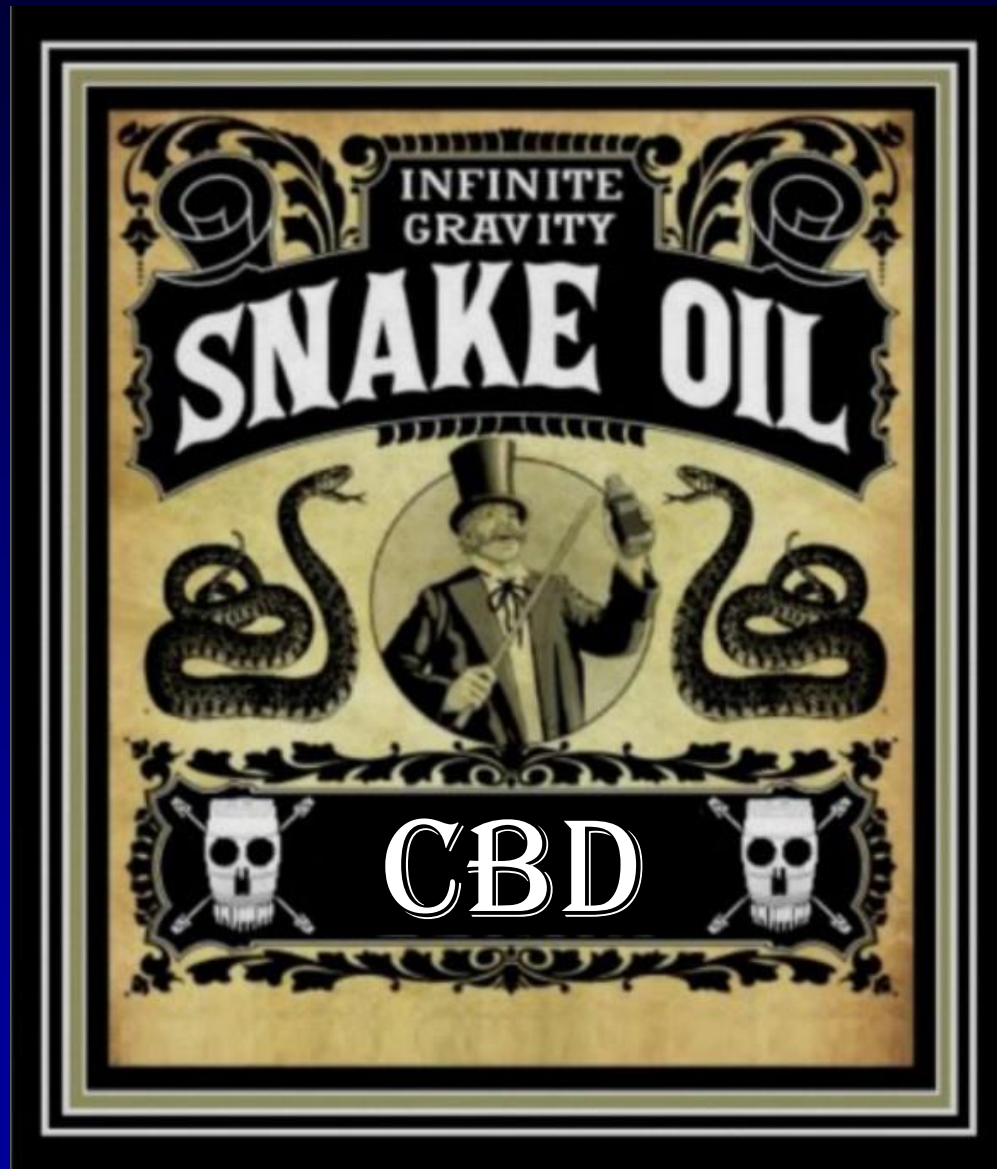
“(c) EFFECT ON OTHER LAW.—Nothing in this subtitle shall affect or modify—

“(1) the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.);

“(3) the authority of the Commissioner of Food and Drugs and the Secretary of Health and Human Services—

“(B) to promulgate Federal regulations and guidelines that relate to the production of hemp under the Act ...

# Current Situation



# Drug Interactions

RX FOCUS DRUG INTERACTIONS

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@ WWW.  
PHARMACY  
TIMES.COM

Pharmacy  
Times

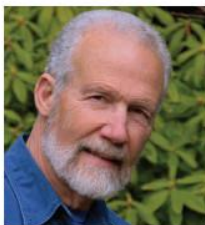
For references, go to [www  
.PharmacyTimes.com/  
publications/issue](http://www.PharmacyTimes.com/publications/issue).

## Drug Interactions with Marijuana

John R. Horn, PharmD, FCCP, and Philip D. Hansten, PharmD



John R. Horn, PharmD,  
FCCP



Philip D. Hansten,  
PharmD

Marijuana has been approved for recreational use in 2 states and for medicinal use in about 20 states. Of course, the unapproved use of marijuana is fairly common. In addition to its recreational use, marijuana has been

in response may be due to the THC:CBD ratios in the 2 plants. *C sativa* usually has a higher concentration of THC, while CBD predominates in *C indica*.

Commercial preparations of oral THC are available as dronabinol (Marinol) and nabilone (Cesamet). Both of these preparations only contain THC without any CBD. Thus, the pharmacologic effect of these products may differ from that of natural cannabis.

Unfortunately, few data are available regarding the potential drug interactions associated with marijuana. Nevertheless, we can make some predictions of potential interactions based on the known pharmacology of marijuana.

similar increases in THC concentrations. Conversely, rifampin, a CYP3A4 inducer, has been reported to reduce THC levels by 20% to 40%.

### *Cannabidiol*

CBD is a substrate of CYP3A4 and CYP2C19.<sup>6</sup> Similar to THC, ketoconazole was noted to increase the plasma concentration of CBD by about 2-fold, while rifampin reduced CBD levels by 50% to 60%. Other CYP3A4 inhibitors and inducers should be expected to have a similar effect on CBD plasma concentrations if coadministered. Omeprazole, a modest inhibitor of CYP2C19, did not alter the plasma concentration of CBD in

<https://www.pharmacytimes.com/publications/issue/2014/december2014/drug-interactions-with-marijuana>

# Making THC from CBD



US 20040143126A1

(19) **United States**

(12) **Patent Application Publication**

**Webster et al.**

(10) **Pub. No.: US 2004/0143126 A1**

(43) **Pub. Date: Jul. 22, 2004**

(54) **CONVERSION OF CBD TO DELTA8-THC  
AND DELTA9-THC**

(76) **Inventors: G. R. Barrie Webster, Manitoba (CA);  
Leonard P. Sarna, Manitoba (CA);  
Raphael Mechoulam, Jerusalem (IL)**

Correspondence Address:  
**Ade & Company  
1700 360 Main Street  
Winnipeg Manitoba R3C 3Z3 (CA)**

(21) **Appl. No.: 10/469,928**

(22) **PCT Filed: Mar. 7, 2002**

(86) **PCT No.: PCT/CA02/00451**

## Related U.S. Application Data

(60) **Provisional application No. 60/273,628, filed on Mar. 7, 2001.**

## Publication Classification

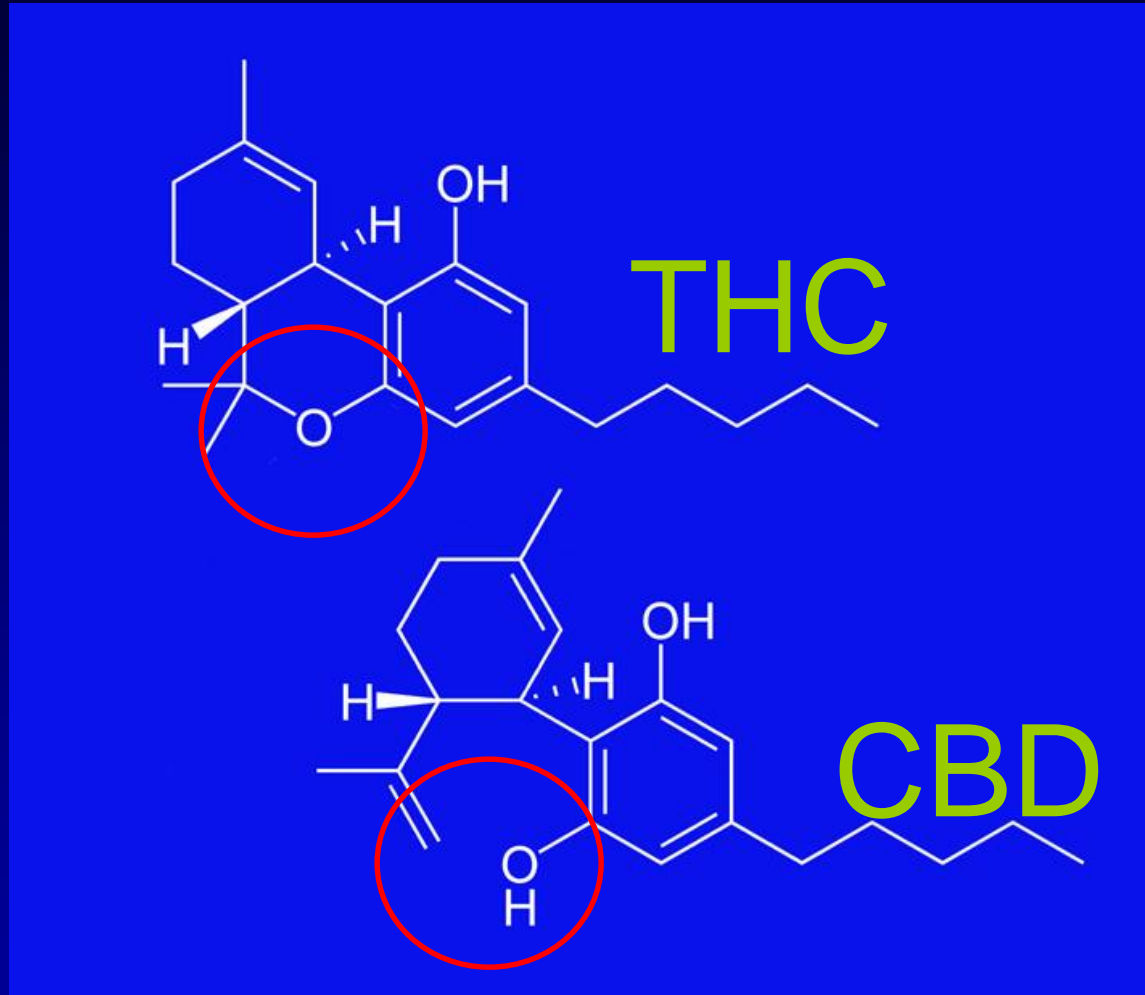
(51) **Int. Cl.<sup>7</sup> ..... C07D 311/80**

(52) **U.S. Cl. .... 549/390**

(57) **ABSTRACT**

Methods of converting cannabidiol to  $\Delta^8$ -tetrahydrocannabinol or  $\Delta^9$ -tetrahydrocannabinol are described. The described methods produce higher yields and higher purity compared to prior art methods.

# Making THC from CBD



<https://patentimages.storage.googleapis.com/ed/9f/1b/58e43cc4792306/US20040143126A1.pdf>

# Effect of CBD on IOP

Glaucoma

## $\Delta^9$ -Tetrahydrocannabinol and Cannabidiol Differentially Regulate Intraocular Pressure

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Accepted: November 2, 2018

Citation: Miller S, Daily L, Leishman E, Bradshaw H, Straiker A.  $\Delta^9$ -tetrahydrocannabinol and cannabidiol differentially regulate intraocular pressure. *Invest Ophthalmol Vis Sci*. 2018;59:5904-5911. <https://doi.org/10.1167/iovs.18-24838>

We find that the regulation of ocular pressure by THC and CBD is more complex than previously appreciated. THC acts via a combination of CB1 and GPR18 receptors in a sex-dependent manner, while CBD can both raise IOP and interfere with the effects of THC.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6295937/>



# The Way Forward



# Regulatory Framework



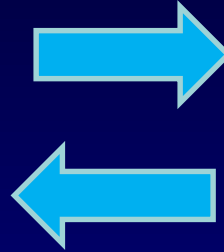
## Office of National Drug Control Policy



The Office of National Drug Control Policy (ONDCP) works to reduce drug use and its consequences by leading and coordinating the development, implementation, and assessment of U.S. drug policy. In addition to its vital ongoing work, ONDCP also provides administrative and financial support to the President's Commission on Combating Drug Addiction and the Opioid Crisis, established by Executive Order on March 29, 2017 by President Donald J. Trump.

<https://www.whitehouse.gov/ondcp/>

# Regulatory Framework



# Hawaii HIDTA Board

## STATE AGENCIES:

Hawaii State Attorney General's Office  
Department of Public Safety Director  
Department of Public Safety Sheriff Division  
Hawaii National Guard

## LOCAL AGENCIES:

Honolulu City and County Prosecutor's Office  
Hawaii Police Department  
Honolulu Police Department  
Kauai Police Department  
Maui Police Department

# Fusion Centers



Official website of the Department of Homeland Security



Homeland  
Security

Topics

How Do I?

Get Involved

News

About DHS

## Fusion Centers and HIDTA Investigative Support Centers

State and major urban area fusion centers (fusion centers) and High Intensity Drug Trafficking Area (HIDTA) Investigative Support Centers (ISCs) help protect our nation by serving as valuable conduits for information sharing among federal, state, local, tribal and territorial (SLTT) agencies.

<https://www.dhs.gov/fusion-centers-and-hidta-investigative-support-centers>

# Suggestion #1

Direct the DEA  
to adopt a rule that exempts the  
state medical use of cannabis  
from federal Schedule I regulation.

# Suggestion #2

Motivate the  
Hawaii Medical Board  
to adopt formal guidelines  
for certifying providers.

# Suggestion #3

Provide funding to support the compliance efforts of Hawaii's Medical Use of Cannabis and Hemp Programs.



# ONDCP



# Original Medical Use Bill

THE SENATE  
TWENTIETH LEGISLATURE, 1999  
STATE OF HAWAII

S.B. NO.

862

S.D. 1

**1999**

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A BILL FOR AN ACT

RELATING TO MEDICAL USE OF MARIJUANA.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

The legislature further finds that allowing the medical use of marijuana could promote Hawaii as being an international center for medical treatment and research.

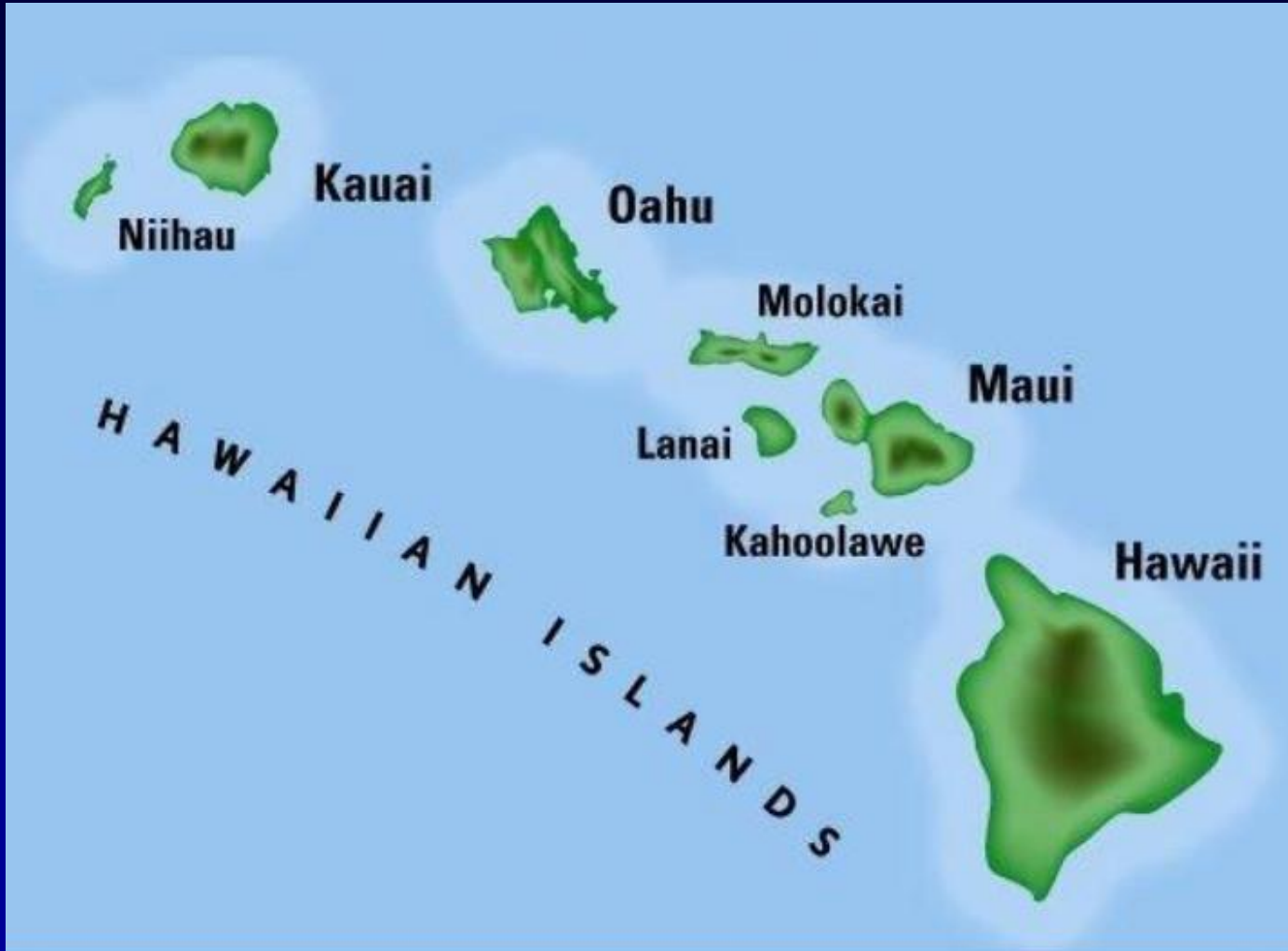
[https://www.capitol.hawaii.gov/session1999/bills/SB862\\_SD1\\_.htm](https://www.capitol.hawaii.gov/session1999/bills/SB862_SD1_.htm)

# UH Cancer Center

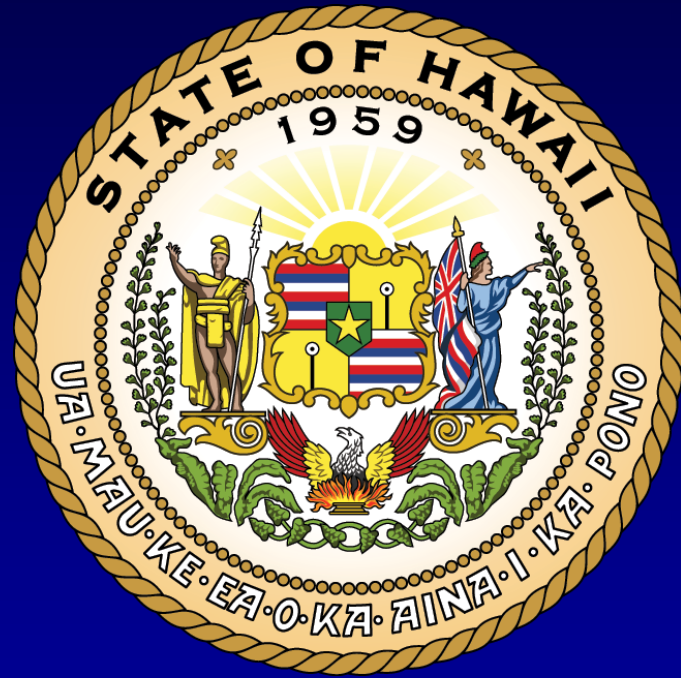


<https://www.uhcancercenter.org/>

# Unique Border Control



# Please Fix the Problem



# MAHALO !



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