



Whole Body Health

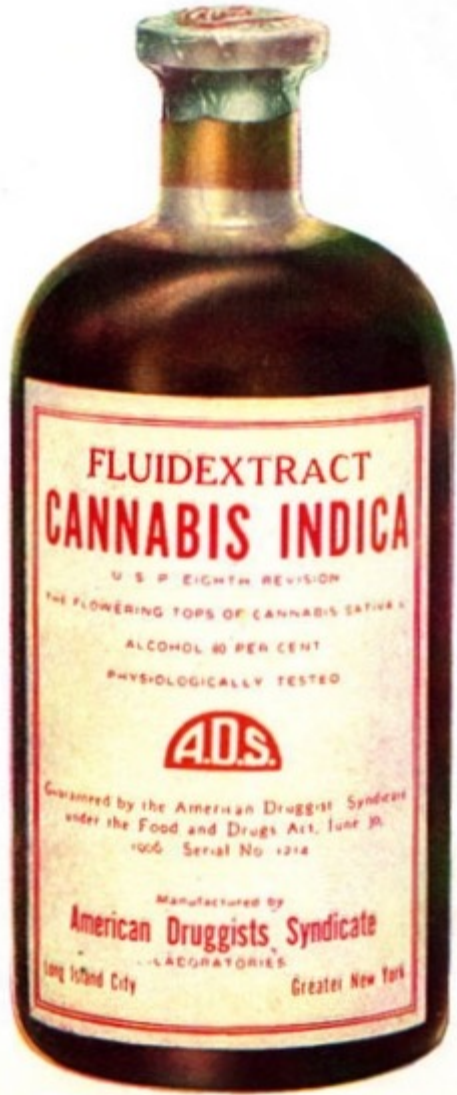
WITH DR. SALEEBY

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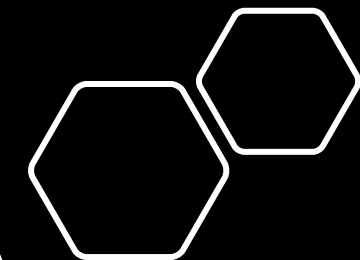
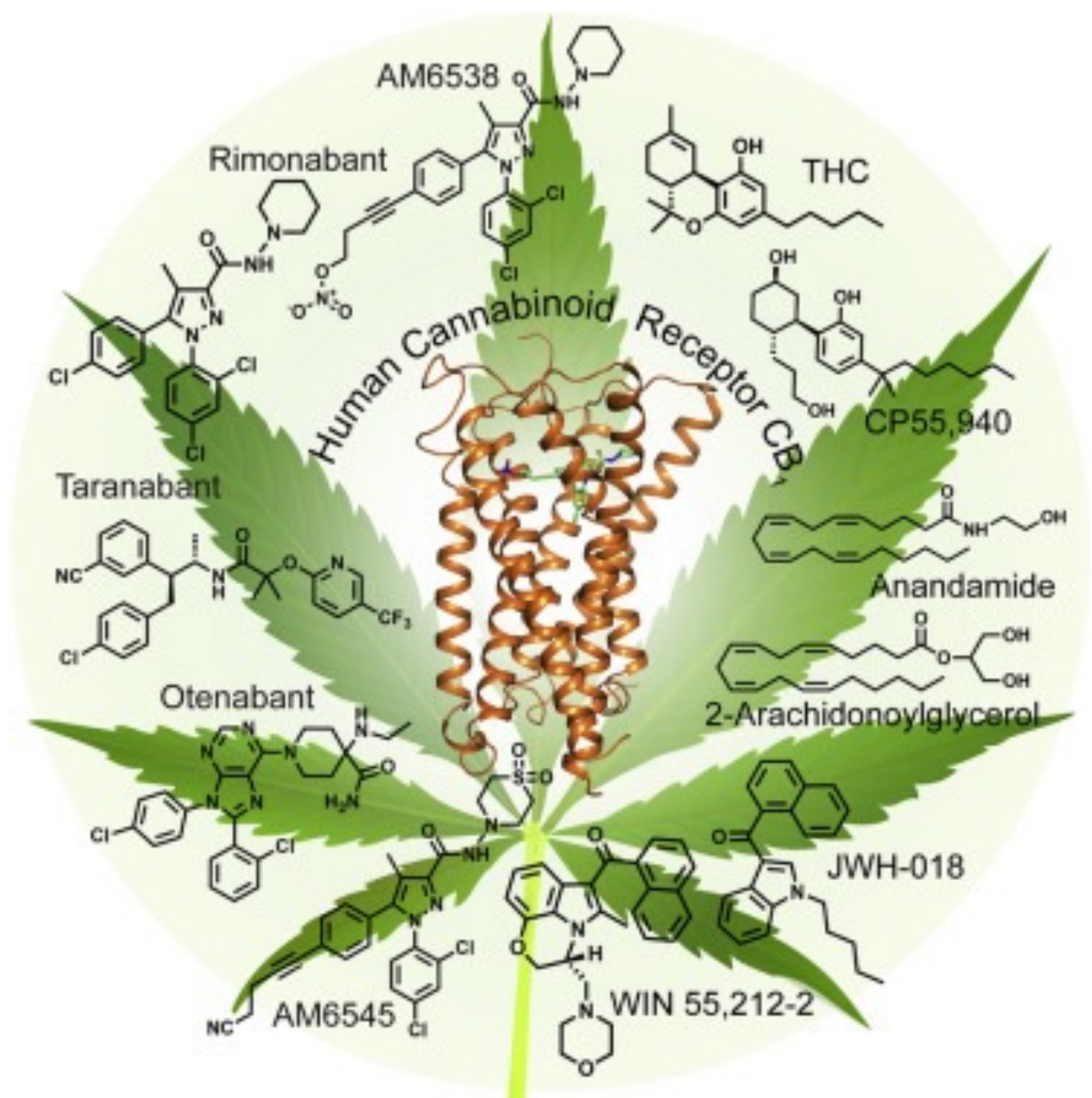
Neuro-Endocannabinoids

Breaking the Ice on CB₁



Not intended as
Medical Advice

- This lecture is informational only and not intended to diagnose or suggest treatments to any individual listening to this lecture.
- We advise you to seek medical direction with your licensed primary care provider.



Objectives

- What is the history and role of various components of cannabis, including THC, CBD, and other cannabinoids, in medicine, and how does their research into the impact on the endocannabinoid system pave the way for further exploration in the field?
- What is the 'Entourage Effect' and how does the combined effect of different cannabinoids and terpenes found in cannabis, particularly their anti-inflammatory, anti-depressant, neuro-protective, anti-microbial and sedative effects, indicate the vast potential of cannabinoids in healthcare?
- Why is understanding and measuring endocannabinoid tone, which can impact pain threshold, digestion, mood, and sleep, important and how can genetic testing, symptomology, and tracking be used to assess it?
- What is the significance of working with a knowledgeable practitioner with medicinal cannabis and cannabinoids?

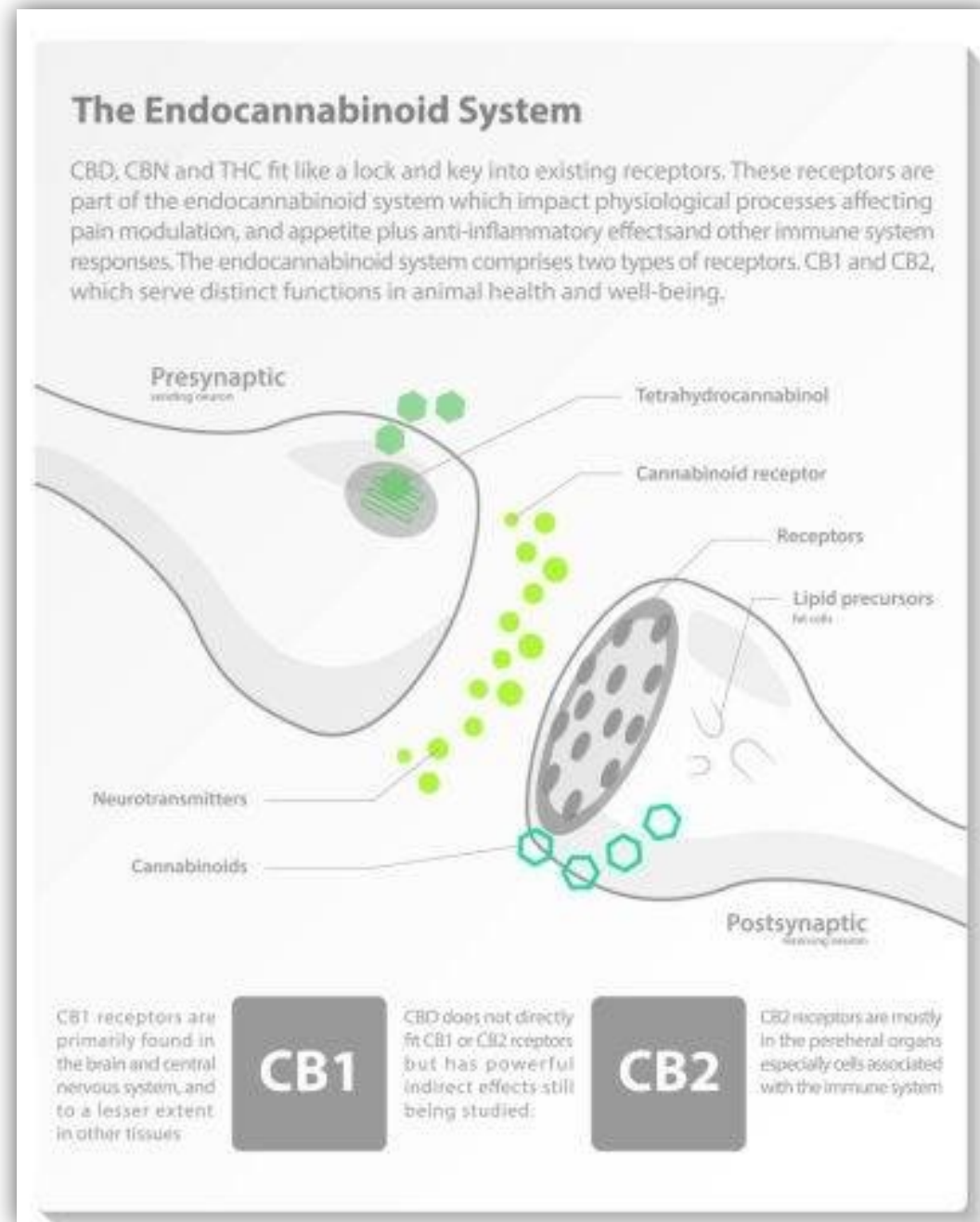
Defining the endocannabinoid system (ECS)

- The endocannabinoid system (ECS) is a biological system that regulates various functions in the body. Involves the CB-1 and CB-2 receptor systems. Complex cell signaling network involving cannabinoid substances, enzymes and cannabinoid receptors that regulate functions in the human body.
 - CB-1 involves the nervous system (CNS)
 - CB-2 involves the immune system and peripheral tissue cells
- First discovered in the 1990s by Dr. Lisa A. Matsuda (while at MUSC in Charleston, SC) who described the structure and function of the cannabinoid receptor CB-1.
- Dr. Lumir Hanus and Dr. William DeVane discovered the endocannabinoid anandamide, a neurotransmitter that binds to CB-1.
- The ECS consists of cannabinoid receptors, endocannabinoids, and enzymes that synthesize and degrade them.
- Further researched by Dr. Ethan Russo (MD) and others; book by Dr. J. Rosado MD. Research continues at a feverish pace.

Endogenous and Exogenous

- Minor Cannabinoids
 - Sought for top 3 things: **Pain, Sleep and Mood**
- Endogenous – Anandamide, 2-AG; last only a short time; rather few compared to plant derived.
 - *Anandamide (AEA) and 2-araquinodoylglycerol (2-AG)*
- Exogenous – plant derived and many; last longer; several forms of delivery: oral, inhaled, topical/transdermal and even IV.
 - *AKA: Phytocannabinoids.*

Endocannabinoid system began evolving about 600M-years ago but only was discovered in the 1990s.



The endocannabinoid System is the largest neurotransmitter system in the human body and plays a crucial role in how our body can benefit from CBC and other hemp products.

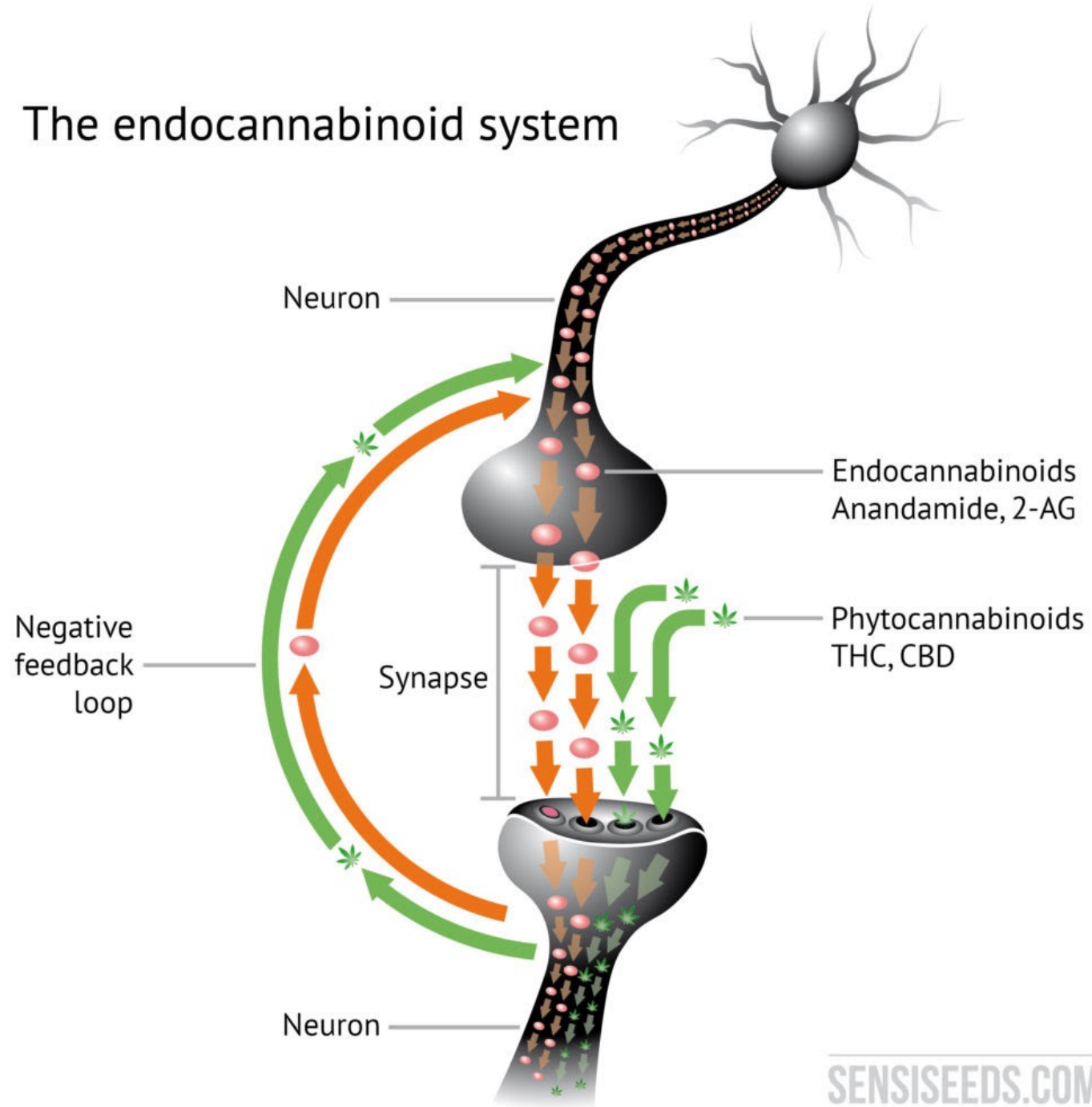
Types of cannabinoids

- There are about **150** identified isolated cannabinoids known thus far
- Examples: CBD (cannabidiolic acid), CBN (cannabinol), DBG (cannabigerol), CBC (cannabichrome), CBL (cannabicyclol), ...
- Also: Delta-8 and Delta-9 and THC
- THCV
 - CBC: antiviral and microbial, bone stimulating, antioxidant, neuro-regeneration
 - CBG: anti-fungal, anti-psoriatic, muscle and bone recovery, antioxidant
 - CBN: sedative effects, lowers inflammation and seizure activity; sleep
 - CBD (CBDa): sleep, mood, pain, skin/acne, much more; *CBDa absorbed 2X better*
 - CBL: anti-inflammatory, anti-cancer and antimicrobial
- Found in other plants and fungi

MOA

- The hydrophobic nature of cannabinoid substances suggests that cannabinoids resemble anesthetic agents (drugs for anesthesia) in their action.
- They nonspecifically disrupt cellular membranes. Recent evidence supports a mechanism involving a G-protein-coupled receptor (G-Receptors) found in brain and neural tissues.
- They are known to inhibit adenylate cyclase activity in a dose-dependent, stereoselective manner.
- With the great and fascinating complexity of the endocannabinoid system, as well as its relationships with exogenous cannabinoids, several types of receptors and systems in such a wide & varied distribution in the body, gives us the challenge of exploring & researching for the benefit of humanity.

The endocannabinoid system



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THCV

- THCV (tetrahydrocannabivarin) is a compound in cannabis that offers a unique array of effects and medical benefits that sets it apart from other cannabinoids like THC and CBD.
- THCV is an appetite suppressant. In contrast to THC, THCV may dull the appetite. This may be good for consumers focused on weight management.
- THCV may help with diabetes. May have the ability to regulate blood sugar levels and reduce insulin resistance.
- THCV may reduce panic attacks. Can mitigate anxiety attacks in PTSD patients without suppressing emotion.
- THCV may help with Alzheimer's Dz. Tremors, motor control, and brain lesions associated with AD appear to be improved by THCV; research is in progress.
- THCV stimulates bone growth. Because it promotes the growth of new bone cells, THCV is being looked at for osteoporosis and osteopenia.
- THCV binds to CB-1 Receptors with an affinity of 30X that of THC.

Balancing act

- Balance or “tone” between endocannabinoids
- You can have too much tone
- You can have too little tone

- Idiosyncratic outcomes (effects/side-effects) have been noted

- Avoid the HYPE, it is just another herbal/botanical in our armamentarium

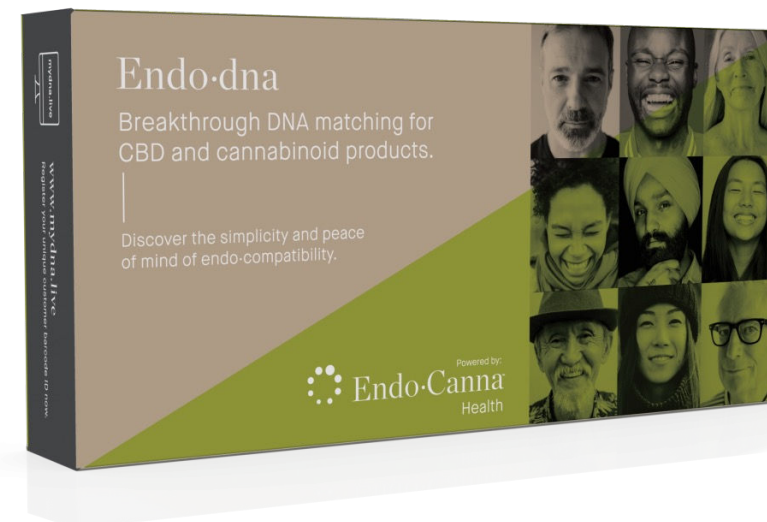
Entourage effect

- The combination of cannabinoids work symbiotically with each other to have an entourage effect to heighten effects.
- CBD + THC allows for 10X the effect (so can use lower doses of each and realize a better peripheral neuropathy Tx)
- Using CBD in combo with Beta-Caryophyllene is more effective in dental pain reduction.
- Full spectrum vs Isolates.



Testing DNA

- DNA testing to figure out the best cannabinoids for you.
 - Upload data set from 23&me or Ancestry.com
- 57 different genetic Trait Reports in 12 different categories.
- Precision cannabinoid ratios and terpene profile matching.
- Personalized drug-to-drug interaction alerts.
- Cannabinoid risks/benefits for your specific genotype.
- Is this Fluff?
- Should I get it done?



Terpenes + cannabinoids

- For added effect:
- Terpenes:
 - Linalool – calm
 - Beta-caryophyllene – pain, skin
 - Myrcene – sleep and calm
 - Limonene – wellness
 - Alpha-pinene – focus
 - Terpinolene – sleep
- Help cannabinoids along the way with extra benefits.

Terpenes are a large group of aromatic volatile unsaturated hydrocarbons found in the essential oils of plants, especially conifers and citrus trees. They are found in rosemary, lavender and cannabis.

They work synergistically with cannabinoids for better effects. Benefits of full spectrum hemp oils vs isolates.



Medicinal Marijuana

Stigma

- 50 years of being associated with stoners and hippies of the 70s
- Negative impression with “weed”, ganja, MJ and chronic
- Like Alcohol during the prohibition era
- Medicinal herb going back thousands of years to first documented use in Tibet.
- Use of cannabis goes back to Neolithic years 8800 BCE
- Earliest restriction on cannabis date back to the Islamic world of 14thCentury
- One of the earlies crops cultivated and in ancient Korea a very important crop back 3000 BCE.

Big Pharma's attempt at a product

Jazz Pharmaceuticals Epidiolex® \$\$\$\$



The oral solution treats seizures associated with Lennox-Gastaut syndrome (LGS) or Dravet syndrome in patients 2+ years of age. Two of the most difficult-to-treat epilepsy-related conditions. *Hey, didn't Charlottes Web CBD company have same success? Why this overpriced product?*

One example of a full-spectrum hemp extract



Full Spectrum Hemp & Trifecta



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The logo for FLCCC Alliance features the letters 'FLCCC' in a large, bold, sans-serif font. The 'F' and 'C's are dark blue, while the 'L' and the second 'C' are red. Below this, the word 'ALLIANCE' is written in a smaller, red, spaced-out sans-serif font. The background is a light blue-to-white gradient with a pattern of faint, overlapping hexagons and lines.

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