

Excerpts from:
Understanding the Power & Complexity of Healing Hemp

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- The Cannabis plant has been appreciated worldwide for its therapeutic properties for thousands of years and was used in the U.S., listed in the United States Pharmacopeia into the early 1920's. It was classified in the U.S. as a Schedule 1 drug (like heroin and cocaine) after laws were passed in 1937, restricting its use.
- Fast forward to the later 1900's and due to the high amount of recreational drug use with Cannabis, a significant number of people developed the idea that there might be medicinal benefits to "Pot" and experimentation began, leading to the discovery that several types of cancers and seizure disorders seemed to respond to the THC and other compounds in medical marijuana.
- Fast forward again to the first decade of the 21st century and substantial pharmaceutical scientific research is being conducted in Israel in government programs. Even more notable is the research that has been conducted by the pharmaceutical company, G.W.Pharma, in Great Britain resulting in the 2018 approval of a CBD drug called Epidiolex, approved for childhood seizures, with an estimated cost of between \$2,500 to \$5,000 per month.

My involvement with Industrial Hemp (which is low in THC and high in CBD) began with intensive clinical research starting in the beginning of 2017. I'll recount how I progressed rapidly in integrating many previous years of research that had been conducted by others, and moving further ahead with new discoveries of my own about the broad potential of hemp-derived healing compounds....

- I bought about a dozen industry leading brands of CBD oil, from the US and from Europe, and kept them in my office for testing I would be doing with patients on the effects of hemp. I use numerous pre-administration screening techniques to measure the real-time response of patients to administration of therapeutic product – ranging from orthopedic neuromuscular tests to forms of applied kinesiology, to bioenergetics assessment.
- Then I did the following very unusual controlled study that I am confident no other company has done. I serendipitously found a company in Kentucky that had been developing a very high quality and stable strain of high CBD low THC industrial hemp. They grow it and dry it and sell it dry. But they also have a facility that extracts that exact same material into a concentrated paste made by so-called supercritical CO₂ extraction. So I had the company send me a batch of dried herb and the CBD paste made from that herb that was diluted into MCT coconut oil that they were selling in a one ounce bottle. Probably 95% of the CBD/hemp extract products on the market come from such diluted CBD paste. Then I took the dried hemp herb and made various different types of alcoholic extracts in my herbal company. So when I went to clinical testing on my patients I had alcoholic extracts my company made as well as CO₂ extracted hemp concentrate suspended in coconut oil – THAT CAME FROM THE VERY SAME raw material.

What I found was that both the alcoholic extracts and the CO₂ extracted paste had about the same degree of therapeutic potential and differed slightly in the body reflexes they influenced. I was not strongly impressed

by either of these products. Then my business partner serendipitously found research that included extracts of hemp made with olive oil, lacking any meaningful discussion of how those extracts were made.

So I went on a tear, making many different types of olive oil extracted hemp until the process was born that yields the remarkably active olive oil extracted hemp that we now sell. It has much higher biological activity as compared to all the test products in my office that I mentioned initially – most of which were made by CO₂ extraction. Supercritical CO₂ extraction can be easily scaled and is already an enormous and profitable industry. Soon it is going to become an industrial commodity of low quality CBD extracts found in SuperCenters, online, and in Mini-mart stores. That, unfortunately, is already happening.

- I want to summarize as fast as I can the profound physiological action of whole plant hemp extract.

How Does Hemp Work?

We can get a rough sketch; usable understanding of how medicinal hemp works by looking at its major healing components, as excerpted from my 61 page white paper.

PHYTOCANNABINOID

- The vast majority of articles describing hemp extracts (containing CBD and THC, which are the most known phytocannabinoids) are misleading in that they are seriously incomplete. They focus primarily on CBD and discuss how it influences the body's own endocannabinoid CB1 and CB2 receptors. But looking at the literature more closely, from pages 4-10 of my 61 page white paper, we see that CBD especially and THC on their own do not exert a strong influence on endocannabinoid receptors. THC works more strongly than CBD and tends to notably influence CB1 receptors in the brain. Importantly, phytocannabinoids interact with numerous types of receptors in the human body, as we see following.

THC especially influences G-protein coupled receptors- GPCR's.

GPCR's interact with G proteins in the plasma (cell) membrane and work like a switch — turning on or turning off communication from outside the cell. It is a very complex process with many intermediary steps.

"CBD acts in some experimental models as an anti-inflammatory, anticonvulsant, anti-oxidant, anti-emetic, anxiolytic and antipsychotic agent, and is therefore a potential medicine for the treatment of neuroinflammation, epilepsy, oxidative injury, vomiting and nausea, anxiety and schizophrenia, respectively. The neuroprotective potential of CBD, based on the combination of its anti-inflammatory and anti-oxidant properties, is of particular interest and is presently under intense preclinical research in numerous neurodegenerative disorders...."

Phytocannabinoids have:

- **interactions with PPARs (Peroxisome Proliferator-Activated Receptors)**

PPAR's are nuclear hormone receptors that control the transcription of target genes.

- **probable interactions with NF-kB (nuclear factor-kappaB)**

NF-kappaB proteins respond to many different stimuli, and regulate a broad range of genes involved in cellular responses to: immune, inflammatory, stress, proliferative and apoptotic (programmed cell death) events. They act like a switch, turning inflammation "on" or "off".

- **probable interactions with glycine receptors (GlyR)**

Morales and colleagues (op.cit.) state: "Glycine receptors mediate synaptic inhibitory neurotransmission involved in crucial physiological and pathological processes. ..."

- **probable interactions with TRP channels**

TRP channels are "membrane proteins [that] modulate ion entry mediating a variety of neural signaling processes. They are involved in numerous physiological functions such as temperature sensation, smell, taste, vision, pressure or pain perception among others."...

TERPENOIDS

"Terpenoids and other isoprenoids have important functions as messengers...within organisms, within organs and within the cell body, in particular between the cell surface and the cell nucleus." ... "They can influence cell stage and mitosis, resulting in changes in morphology and differentiation." "Terpenoid end products ... can interfere with [change] gene expression, or more directly, act as key enzyme regulators."

PHENOLICS (polyphenols)

Polyphenols exhibit a broad range of pharmacological actions, including antimicrobial, antiviral, antioxidant, anti-inflammatory, sedative, and wound-healing properties.

The essential point to take away is to understand that compounds in hemp that is properly extracted contain signaling agents (so-called "ligands") that turn on and turn off essential cell receptors in many different families, affecting about everything in the body. Please make sure to review pages 4-10 for it is too complex to take time for here.

From my personal documentation, let's look at practical applications of CBD rich whole hemp extracts:

• RELEVANT VIDEOS TO REVIEW

Farm-Rapidly Stopping Symptoms of Acute Lumbar Disc Syndrome

<https://youtu.be/sYZsdSpaR9U>

Then

- Jenny-Industrial Hemp-CBD for stress resistance

<https://youtu.be/NHAYKeZ4qic>

And finally

- Melody-CHT+ Hemp for bone & joint health

<https://youtu.be/ZyXk9rUKp2w>

• HeavenSentHemp™ Products

