What is the **Endocannabinoid System**, or ECS?

Discovered in the late 1980s, the Endocannabinoid System, or ECS is a biological system found in all mammals, composed of endocannabinoids and cannabinoid receptors. ECS affects virtually every cell, muscle, organ and tissue in our body, and critical to regulating a wide range of body processes, our nervous system, immune system, digestive system, endocrine glands, brain, heart, lungs, kidneys, liver, spleen, bones, muscles, blood vessels and cells, lymph cells, and fat cells.

The ECS is believed to have more cellular receptor sites than any other receptor system. The widespread distribution of these cannabinoid receptors shows just how important the ECS is to our overall bodily function and health.

What are Endocannabinoids?

Endocannabinoids are endogenous neurotransmitters that are produced by our bodies. They regulate neurotransmission and allow for feedback loops. Anandamide and 2-Arachidonoylglycerol (2-AG) are the two primary endocannabinoids.

What are Phytocannabinoids and how are they different than Endocannabinoids?

Phytocannabinoids are plant derivative compounds (primarily extracted from cannabis) that mimic the characteristics of the endocannabinoids. THC and Cannabidiol (CBD) are the two primary phytocannabinoids that mimic the endocannabinoids Anandamide and 2-AG, respectively.

Both endocannabinoid and phytocannabinoids, collectively referred to as cannabinoids, bind to cannabinoid receptors that exist throughout the mammalian body.
What are cannabinoid receptors?

Our ECS includes two primary cell cannabinoid receptors, CB1 and CB2. While these receptors are found throughout the body, they tend to concentrate in certain areas. CB1 receptors are abundant in the brain, while CB2 receptors are more often found on immune cells, in the gastrointestinal tract, and in the peripheral nervous system.

The endocannabinoid Anandamide, as well the phytocannabinoid THC target CB1 receptors, predominantly found in the brain and nervous system, as well as in peripheral organs and tissues. The other main endocannabinoid 2-Arachidonoyl-glycerol (2-AG) and its own mimetic phytocannabinoid, CBD, are active at both CB1 and CB2 cannabinoid receptors.

Why is ECS important?

The ECS promotes homeostasis, or dynamic biological balance, in every cell, tissue, and organ, including the brain. Our ECS is responsible for overall health and wellness when properly functioning. Specifically, both 2-AG and CBD are involved in the regulation of immune system functions, inflammation, sleep, stress response, appetite, mood, memory and pain management.

What is Homeostasis?

Homeostasis, or dynamic balance, is the concept that most biological systems are actively regulated to maintain conditions within a narrow range. Conditions need to be just right for our cells to maintain optimum performance, and mechanisms have evolved to draw them back to the “Goldilocks zone” if they move out. ECS is a vital molecular system for helping maintain homeostasis—it helps cells stay in their Goldilocks zone. The stronger our physiological ability to stay in homeostasis, the more robust our capacity to be in homeostasis, the healthier we are.
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Mana Artisan Botanics

What is Cannabidiol (CBD)?

Cannabidiol, or CBD, is a non-psychoactive cannabinoid found in cannabis. CBD has been shown to have powerful anti-inflammatory and anti-anxiety properties, without exerting a psychotropic effect. Unlike many of the other 85+ cannabinoids, CBD hemp strains have been bred so that CBD occurs in significant quantities; therefore, it is relatively easily extracted from these strains.

Additionally, CBD has been shown in a patent by the U.S. National Institutes of Health to have significant antioxidant and neuro-protective properties, suggesting that it could be a potential treatment for neurological disorders.

Pharmaceutical drugs work at the level of the symptoms, not treating the imbalances in the systems that lead to the diseases and associated symptoms. CBD, on the other hand, works at the level of the system of balance, helping regulate our bodies to enable homeostasis.

While CBD is not yet FDA approved for any condition, many studies have shown promising results for a variety of conditions. Indications are that CBD:

- Combats anxiety and depression
- Combats inflammatory disorders
- Reduces nausea and vomiting
- Suppresses seizure activity
- Combats psychiatric disorders
- Combats neuro-generative disorders
- Combats tumor or cancer cell growth

Does CBD have any side effects?

According to a recent World Health Organization (WHO) report, published in November 2017, CBD is safe and well tolerated in humans and animals, and is not associated with any negative public health effects. Experts further stated that CBD does not induce physical dependence and is “not associated with abuse potential.”


"CBD has “been demonstrated as an effective treatment for epilepsy” in adults, children, and even animals, and that there’s “preliminary evidence “that CBD could be useful in treating Alzheimer’s disease, cancer, psychosis, Parkinson’s disease, and other serious conditions.”
Do Cannabinoids help regulate inflammation?

Inflammation is a natural protective reaction the immune system has in response to infection or physical damage. It’s important that inflammation be limited to the location of damage and doesn’t persist longer than needed, which can cause harm. Chronic inflammation and autoimmune diseases are examples of the immune system getting activated inappropriately. When that happens, the inflammatory response lasts too long resulting in chronic inflammation, or may get directed toward healthy cells leading to auto-immune diseases.

In general, cannabinoids seem to suppress or limit the immune system’s inflammatory signals.

“Most of our research demonstrates that endocannabinoids are produced upon activation of immune cells and may help regulate the immune response by acting as anti-inflammatory agents. Thus, interventions that manipulate the metabolism or production of endocannabinoids may serve as a novel treatment modality against a wide range of inflammatory disease.”

— Professor Prakash Nagarkatti, Vice President for Research at the University of South Carolina

(Cannabinoids as an emergent therapeutic strategy for lessening the impact of inflammation on oxidative stress. Booz GW.)

(Cannabinoids suppress inflammatory and neuropathic pain by targeting a3 glycine receptors. Xiong W et al.)

Do Cannabinoids help regulate anxiety and sleep disorders?

Animal and human studies indicate that CBD has anxiolytic (i.e. anxiety-reducing) properties. Recent clinical research suggests CBD reduces anxiety through its effects on activity in limbic and paralimbic brain areas. (Neural basis of anxiolytic effects of cannabidiol (CBD) in generalized social anxiety disorder: a preliminary report. Crippa et al.)

Preliminary research into cannabis and insomnia also suggests that CBD may have therapeutic potential for the treatment of insomnia, REM sleep behavior abnormalities as well as excessive daytime sleepiness, at least in part due to its interactions with serotonin receptors in the brain. (Cannabis, Cannabinoids, and Sleep: a Review of the Literature. Babson et al.)

How fast will CBD work?

Following consumption, CBD works near instantaneously by binding to the CB1 and CB2 receptors on the surface of cells in your brain and cells of your immune system throughout your body. However, the speed at which any individuals will feel the effects of CBD will depend on their unique physiology, as well as their specific ailments. The neuro-protective effects of cannabinoids are cumulative and may take time to demonstrate results.
Not all Hemp Products Are Created Equal

What is the difference between Hemp and Marijuana?

Both Hemp and Marijuana are in the cannabis family. Human intervention has produced variation within the species in terms of THC and CBD levels. Simply put, hemp is designated by a man-made definition of THC levels at or below 0.3%. Marijuana is always harvested from female plants and typically has high THC levels with little to no CBD, although some strains can contain verifying levels of CBD/THC ratios. Hemp has over 10,000 known uses, which can be made from both the female or male plant depending on the desired product. Mana Artisan Botanics uses only female hemp plants in our products, with lab testing guaranteeing below 0.3% THC levels.

Hemp extract is the phytocannabinoid concentrate, created through some form of extraction process, most commonly either with supercritical carbon dioxide or ethanol. The extract’s potency will depend on the levels of cannabinoids in the plant, so each batch of extract will have different levels of cannabinoids.

Why should you care where your hemp is sourced from?

The demand for hemp extracts is rapidly increasing in the U.S. However, there is still limited supply of U.S.-grown hemp, resulting in high prices that cannot compete against imported hemp extract from places like China or Eastern Europe. Consumers seeking quality products may find a lack of transparency when it comes to the origin of the hemp extract in their products. And unfortunately, there is limited data behind the volume and quality control behind these imported hemp extracts.

At Mana Artisan Botanics, we take great care to source high-quality hemp that is grown in the U.S., with the specific intention to facilitate health and wellness.

Do hemp cultivation methods matter?

In the cannabis industry much of what is grown, unless it is organic, is sprayed with varying levels of pesticides and fungicides. Most consumers don’t realize this is a common practice. Given the increasing demand for hemp and cannabis, many conventional farmers are transitioning their fields to these high value crops. Yet, hemp’s cultivation environment is critical as it can act as a bio-remediation crop, absorbing contaminants from the soil while it grows. If the hemp was grown in poor or misused soil, that plant might contain toxins you won’t want to ingest.

This is why at Mana Artisan Botanics, we source our CBD-rich hemp extract only from farms that have never had any toxic agriculture on the land or use any harmful pesticides or fungicides. All our products are purity and potency tested at multiple lab facilities such as Steep Hill Labs Hawaii and Hawaii Pharm Labs for cannabinoid levels as well as pesticide residue, heavy metals and other contaminants. State of the art testing methods are used and THC levels are guaranteed to be under the federal limit of 0.3%. If you want to review the lab results, please email us at info@manabotanics.com.

Do different hemp strains deliver varying results?

Many of the hemp products on the market derive their CBDs as a by-product from other types of hemp varieties such as fiber or seed for hemp food products. The levels of CBD-rich hemp extract in these products are lower and lack the diverse spectrum of cannabinoids one would ideally want for an “entourage effect” that delivers the possible synergies made available by whole plant therapies.

At Mana Artisan Botanics, the hemp we source is grown with great care to facilitate high levels of the non-psychoactive cannabinoids.
What is the entourage effect?
The "entourage effect" or "plant synergy" is the idea that cannabinoids, terpenoids and flavonoids in cannabis interact synergistically to magnify the therapeutic benefits of the plant’s individual components—so that the medicinal impact of the whole plant is greater than the sum of its parts.

Are whole plant extracts superior to single-compound alternatives?
Do you know the difference between isolates and whole plant extracts? "Whole plant extract" has a wide range of cannabinoids. Most scientists agree that there is between 80-120 cannabinoids plus additional terpenes, in addition to the better known CBD and THC compounds. With a "whole plant" extract you are getting access to the much wider spectrum of cannabinoids in your hemp infusion for that entourage effect. Isolates are not known to be effective as a whole plant extracts for that very reason. Additionally, isolates can be over processed, sometimes with added chemicals for purification.

*Mana Artisan Botanics* uses "whole plant extracts" only, with full range of cannabinoids making our infusions superior to single-compound alternatives.

Why does Mana Artisan Botanics include Turmeric in our hemp infusions?
Curcumin, the yellow pigment of turmeric (*Curcuma longa*) is one of the most intensely researched natural products available today. With over 6,000 peer-reviewed studies, including clinical and scientific research, turmeric is shown to have powerful anti-inflammatory effects. We add turmeric in our hemp infusions to further augment the anti-inflammatory effects of cannabinoids.

Why does Mana Artisan Botanics include Passionflower in our Hawaiian Sleep Hemp Tincture?
Passionflower extract has been shown in studies to be helpful for relieving general anxiety and improving sleep quality. We add passionflower in our sleep hemp tincture to further augment the anti-anxiety effects of cannabinoids.
Mana Artisan Botanics: Products & Ordering

Which Mana product is best for me?
Since all Mana Artisan Botanics products deliver the same amount of phytocannabinoids per ounce (with the exception of the Hawaiian Turmeric Hemp Oil 3X, which has three times the CBD content per fl. oz., 450 mg. vs. 150 mg., as the name suggests) here are some other considerations:

- **Turmeric Hemp Oil** is a vegan and alcohol-free internal option. It is mild in flavor and light in texture. Some enjoy it on their skin as well.
- **Hemp Honey** is the sweetest choice and has an herbaceous undertone. It is simple to incorporate into food and provides additional nutritional support.
- **Hemp Salve** is intended for topical use and works in tandem with our internal support selections. Its smooth texture effortlessly rubs into the skin for easy application.
- **Turmeric Hemp Tincture** is an alcohol-based, nut-free alternative for internal use, and it excites the senses with a mildly spiced flavor.
- **Sleep Hemp Tincture** is an alcohol-based, nut-free alternative for internal use and has a lightly sweetened botanical flavor.
- **Turmeric Hemp Oil 3X** is for those desiring a higher potency. Each ounce contains 450 mg. of CBD hemp extract.

How do I store my Mana products?
Each of our products are shelf stable and do not require refrigeration after opening. To extend their use, we recommend keeping them out of direct sunlight and in a cool, dry place.

Where can I find Mana products?
Please refer to our growing list of retailers nationwide, listed on our website. We are also building relationships with wellness professionals so if you’d like to see your local health guide offer our products in-house, please refer them to us at sales@manabotanics.com.

Can I give Mana products to my pets?
Since all mammals have an endocannabinoid system, our products are suitable for pets, as well.

How do you ship your products?
Currently our products are shipped via U.S.P.S. First Class Mail, Priority Mail or UPS. Due to our extreme distance from most places, overnight shipping is not possible. Orders are processed within 5 business days of receipt and usually arrive to most US destinations within 7-10 business days. International orders may take 4-6 weeks depending on the destination. All rates are calculated at checkout. Import taxes or duties and custom fees are the responsibility of the customer. Please be informed of any additional costs.

What is your return policy?
We accept returned items that are unopened and in original packaging with proof of receipt within 30 days of purchase. For further information please see an expanded explanation of our Return Policy.

I have a question about my order. Who do I contact?
If your order has been fulfilled you will have received a tracking email that you can respond to. Otherwise, please email info@manabotanics.com and include your order number with your question.

My package arrived damaged. Who do I contact?
Please email info@manabotanics.com within 48 hours of receiving your package and we will assist you.

Are these products safe during pregnancy or lactation?
If you are pregnant or lactating, please consult your healthcare professional before taking any herbal products.

Are your products gluten–free?
All of our products are gluten-free. Our alcohol is derived from pharmacy-grade certified, organic sugar cane.

My tincture/oil has specks in it, is this normal?
Sediment is a natural occurrence in tinctures and infused oils that have remained stationary for an extended period of time and is a result of plant particles falling out of suspension. Nothing is wrong with your products, simply shake them well to integrate the particles back into solution.
Citable Research

We’ve put together a short list of relevant research about the endocannabinoid system and the potential health benefits of Cannabidiol (CBD). The abstracts or full texts of each of these research papers can be accessed via PubMed, a research library comprised of more than 27 million citations for biomedical literature from MEDLINE, life science journals and online books. You can also conduct your own search in PubMed by simply typing in CBD and the name of the condition/ailment you’d like to learn more about.

- The endocannabinoid system: an emerging key player in inflammation
- The Endocannabinoid System and Anxiety
- Cannabidiol as an emergent therapeutic strategy for lessening the impact of inflammation on oxidative stress
- Cannabinoids suppress inflammatory and neuropathic pain by targeting a3 glycine receptors
- Cannabidiol reduces intestinal inflammation through the control of neuroimmune axis
- Cannabidiol attenuates cisplatin-induced nephrotoxicity by decreasing oxidative/nitrosative stress, inflammation, and cell death
- Cannabinoids, inflammation, and fibrosis
- Cannabinoids for neuropathic pain
- The non-psychoactive cannabis constituent cannabidiol is an orally effective therapeutic agent in rat chronic inflammatory and neuropathic pain
- CBD as an anxiolytic drug
- Role of the cannabinoid system in pain control and therapeutic implications for the management of acute and chronic pain episodes
- CBD reduces the anxiety induced by simulated public speaking in treatment-naïve social phobia patients
- Antidepressant-Like and Anxiolytic-Like Effects of Cannabidiol: A Chemical Compound of Cannabis Sativa
- CBD regulation of emotion and emotional memory processing: relevance for treating anxiety-related and substance abuse disorders
- Cannabinoids provide neuroprotection against 6-hydroxydopamine toxicity in vivo and in vitro: relevance to Parkinson’s disease
- Effectiveness of Cannabidiol Oil for Pediatric Anxiety and Insomnia as Part of Posttraumatic Stress Disorder: A Case Report
- Endocannabinoid Signaling in Autism
- Cannabidiol displays anti-epileptiform and anti-seizure properties in vitro and in vivo.