

# Biotics Research Full Spectrum Hemp Extract Products

SUPERIOR QUALITY FROM SEED TO SUPPLEMENT

Biotics Research is proud to partner with Ananda Professional for our new and exciting suite of full spectrum hemp extract products. From hemp seed genetics to the manufacturing of the final product, we closely monitor every step in the process, guaranteeing the purest of hemp extract products. A pioneer in the hemp space, Ananda Professional has worked diligently to uphold the highest standards in the industry and presently holds their license with the Kentucky State Department of Agriculture.

## Difference Between Hemp and Marijuana

Both hemp and marijuana come from the same cannabis plant, *Cannabis sativa*. Hemp, however, is defined in the 2018 Farm Bill as the cannabis plant that contains 0.3% or less THC by dry weight and marijuana is the term used for plants containing greater than 0.3% THC. THC is the compound delivering the psychotropic effects of “getting high”, while cannabinoids are the main non-psychoactive ingredient in cannabis.

## Endocannabinoid System (ECS)

The Endocannabinoid System (ECS) is a complex cell-signaling system that supports vital functions keeping physiological regulation pathways in the body balanced. It interconnects numerous systems, organs and tissues and responds to variations in the internal and external environment. The components of the ECS include endocannabinoids, receptors and enzymes.

Endocannabinoids are molecules made by the body that are similar to cannabinoids. The two key endocannabinoids that the body produces on an as needed basis include anandamide (AEA) and 2-arachidonoylglycerol (2-AG). While research has linked the ECS to numerous processes, experts have yet to



determine all of its potential functions. According to researchers, “It is critical to keep in mind that the study of the endocannabinoid system should be region- and condition-specific, along with the consideration of other neurotransmission systems.”<sup>(1)</sup>

The ECS is made up of two different kinds of receptors, CB1 and CB2, which are expressed in the brain and immune system, respectively.<sup>(2)</sup> They act as messengers, giving different directions for what your body should do.

CB1 receptors are found throughout the body, but mostly in the brain and spinal cord. They are concentrated in brain regions associated with the behaviors they influence. For example, there are CB1 receptors in the hypothalamus, which is involved in appetite regulation and the amygdala, which plays a role in memory and emotional processing. CB1 receptors are also found on nerve endings, the termination of a nerve at the distal end of an axon, which sends messages to the brain about body sensations.



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These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

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CB1 receptors are the main molecular target of the binding molecule called anandamide, an endogenous arachidonate-based lipid (N-arachidonylethanolamide), sometimes referred to as the bliss molecule. CB2 receptors are found throughout the central nervous system; they are especially concentrated in immune cells. When CB2 receptors are activated, they work to support healthy inflammatory pathways.

The ECS is responsible for maintaining homeostasis, the process of optimizing a normal balance in the body and its systems, regardless of what is going on in the external environment. Going on a run can activate the ECS, but sometimes our bodies become depleted of the endogenous compounds. In this case, plant-derived bio-actives can help activate and modulate the ECS when the internal or endogenous compounds that support the ECS are depleted. Overall, the role of the ECS helps keep the body in homeostasis.

Hemp compounds found in full-spectrum hemp oil are active at the ECS receptors and support the ECS in maintaining homeostasis.

## The Hemp is Pure

According to the FDA, 91% of hemp-derived products do not meet label claims or were adulterated. Although other products may be less expensive, each of our hemp-derived products has been tested for purity with lot-specific certificates of analyses conducted by a third-party, ISO-certified lab.

## Entourage Effect

The "entourage effect" was introduced as a concept in 1999.<sup>(3)</sup> The proposed mechanism is that the bioactive compounds in hemp act synergistically. The interactions between the phytonutrients that create added health benefits are what is considered the entourage effect. Biotics Research's suite of full spectrum hemp products are all made to include multiple bioactive compounds to give the entourage effect and ensure maximum efficacy.

## What Method Is Used to Extract the Hemp Actives?

Ananda Professional extracts the cannabinoids with ethanol, a Class 3 solvent (safest solvent other than water). Once extracted, the product is refined so that all of the ethanol is removed, which is reflected in the CoA. All cannabinoids must be derived from either CO2 or solvent extraction. Even the CO2 extraction must go through a process called winterization, which requires ethanol so requiring an analysis of residual solvents is important to demonstrate safety and purity.

## Recommended Use:

### FS-20 Hemp Extract

One dropperful (1 ml) directly into mouth each day as a dietary supplement or as otherwise directed by your healthcare professional.

### FS-15 Hemp Extract

One (1) softgel one (1) to two (2) times each day as a dietary supplement or as otherwise directed by your healthcare professional.

## Relief Roll-on:

The hemp infused **Relief Roll-on** is a user-friendly topical application of hemp. Easy to throw in a gym bag or purse for on-the-go, the rollerball application allows the user to keep their fingertips product-free. The ingredients contain the primary hemp actives plus additional skin-healthy ingredients for ease of application, such as aloe and camphor. To help soothe the muscles and promote relaxation, the **Relief Roll-on** is ideal for sports medicine and rehabilitation facilities.

## References

1. Shenglong Zou and Ujendar Kumar, Cannabinoid Receptors and the Endocannabinoid System: Signaling and Function in the Central Nervous System. *Int J Mol Sci.* 2018 Mar;19(3):833.
2. Pertwee RG. "The diverse CB1 and CB2 receptor pharmacology of three plant cannabinoids: delta9-tetrahydrocannabinol, cannabidiol and delta9-tetrahydrocannabivarin". *British Journal of Pharmacology.* January 2008. 153 (2): 199-215.
3. Christopher PL. Groff, Cannabis, from plant to pill. *Br J Clin Pharmacol.* 2018 Nov;84(11):2463-2467.