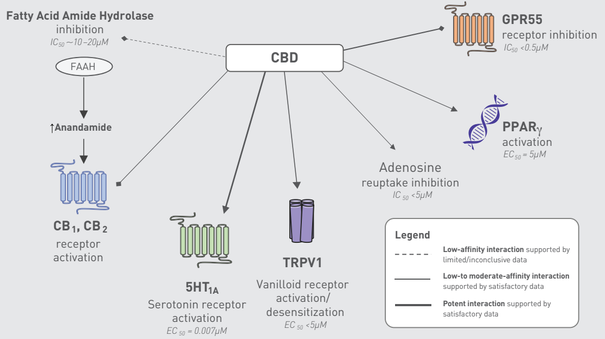
CBD: MECHANISM OF ACTION

CBD has multiple molecular targets that extend beyond the classical cannabinoid receptors. By inhibiting fatty acid amide hydrolase (FAAH), the enzyme that degrades anandamide, CBD activates cannabinoid receptors indirectly.



4 KEY CONSIDERATIONS FOR SELECTING QUALITY CBD

THC FREE

THC-free — non-detectable and every batch tested

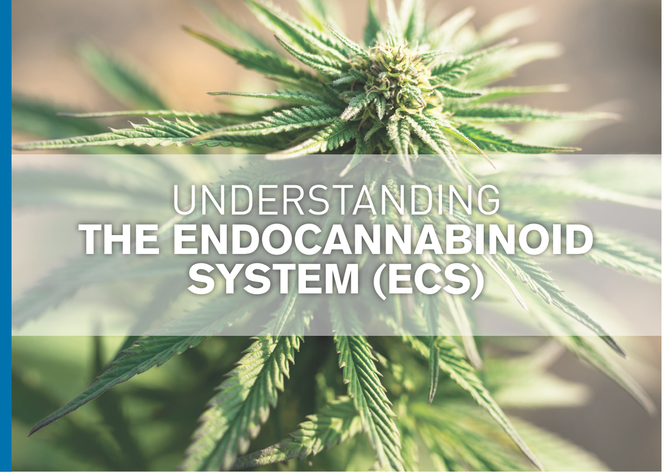
CO_2

Solvent-free, clean CO_2 extraction

Colloidal delivery systems for **enhanced bioavailability**

100% US-sourced, field-grown agricultural hemp

High-quality CBD products provide a **high-potency dosage** per capsule, **broad-spectrum support** from phytocannabinoids, beta-caryophyllene and other terpenes, and are **gluten-free and non-GMO**.



COMPOUND: Cannabidiol (CBD)

CBD is one of approximately 100 phytocannabinoids naturally occurring in hemp plants. Cannabinoids refer to molecules found in the cannabis plant that interact with cannabinoid receptors. Common cannabinoids include: D9-THC, THCV, CBD, CBDV, CBG and CBC.

KEY FACTS: Understanding the ECS

- Plays vital **neurological and immunomodulatory** roles that can affect overall health
- Comprised of specialized eicosanoids, known as endocannabinoids, that the body makes from lipid precursors

1.

Endocannabinoids

1. Anandamide
2. 2-Arachidonoylglycerol (2-AG)

2.

Cannabinoid Receptors

3.

Enzymes
that control endocannabinoid levels

DLGFHM519

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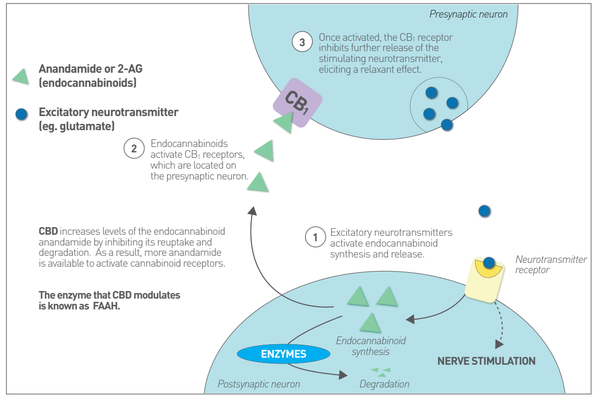
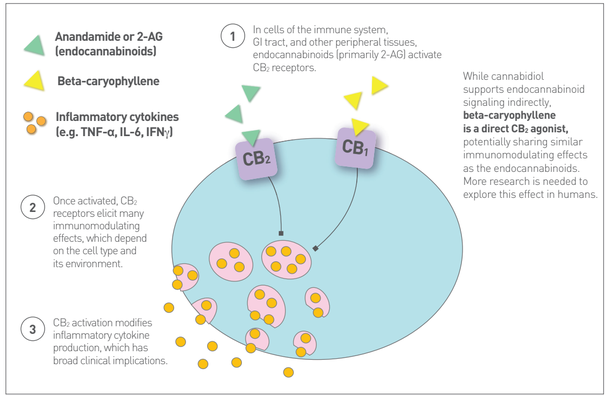
THE ECS IN THE CNS

The two major endocannabinoids — **anandamide** and **2-AG** — activate two different cannabinoid receptors: **CB_1** and **CB_2**. The **CB_1 receptor** is primarily expressed on neurons in the **brain and nervous systems**; a main function is to inhibit excitatory neurotransmission.

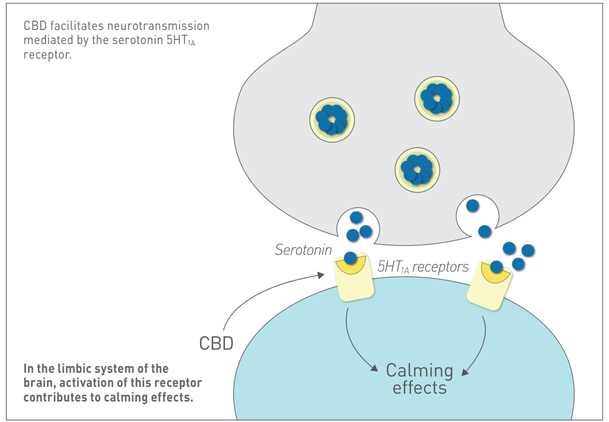


THE ECS IN THE PERIPHERY

The **CB_2 receptor** is located primarily in the gut, immune system, and periphery, where it **modulates the immune response** and downregulates the production of cytokines, such as IL-6, IL-1β, TNFα, IFNβ, and IFNγ. The levels of anandamide and 2-AG are tightly controlled by the balance of synthesis and degradation.

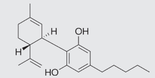


INFLUENCE ON SEROTONIN SIGNALING

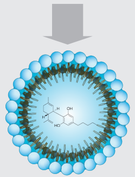


IMPORTANCE OF ENHANCED BIOAVAILABILITY

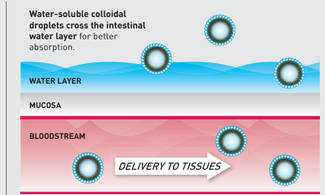
- **Colloidal delivery systems:** water-soluble droplets allow even dispersion of CBD and terpenes in the GI tract
- Droplets easily cross the water layer at the intestinal brush border, a major absorption obstacle for lipophilic compounds



CBD has poor bioavailability due to its lipophilic properties.



Improving water solubility with a colloidal technology greatly enhances absorption and increases plasma levels of CBD.



The intestinal brush border is coated with a water layer, which normally limits the absorption of fat-soluble compounds. Enclosing CBD and terpenes in a water-soluble droplet improves the uptake of these bioactives across the water layer, allowing better absorption.

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