

Here's what's behind our Pain Relief Revolution

Legal Revolution

CBD CLINIC™ is first line of FDA-registered, non-prescription, topical pain relief products made with cannabidiol (CBD). CBD CLINIC can be legally distributed throughout the US—regardless of state laws—due to the products' compliance with US Food & Drug Administration (FDA), US Drug Enforcement Administration (DEA) and US hemp cultivation laws. Additionally, what makes CBD CLINIC products unique is they are the first CBD topical to incorporate FDA-approved analgesic ingredients and produced in an FDA-compliant, FDA-audited manufacturing facility.

Efficacy Revolution

Since its introduction in July 2016, healthcare professionals in nearly every state have been using CBD CLINIC to treat their patients' chronic and acute musculoskeletal pain associated with rheumatoid arthritis, fibromyalgia, sciatica, sports injuries, car accidents, surgical rehabilitation and many other causes. Clinical feedback has been extraordinary. We often receive comments such as "an absolutely positive response from our patients", "My patients love it!", and "For lots of our patients, CBD CLINIC has become their go-to solution for rapid relief from pain". The products have also provided significant relief for current and retired professional athletes.

A Natural Science Revolution

Each formula has three (3) foundational components for supporting rapid and lasting relief from joint and muscle pain:

Natural Emollients

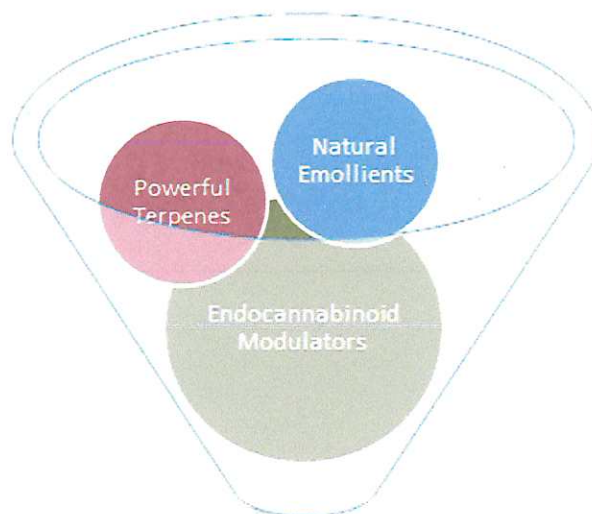
The base formulations of our ointments and creams are made with **all-natural emollients that are readily absorbed by human skin**. Comparatively, many other topical analgesic products use cheap, synthetic ingredients for their base, including benzyl alcohol, cetyl alcohol, diglycol stearate, glyceryl monostearate, petrolatum, etc. CBD CLINIC emollients include organic beeswax, jojoba seed oil, cottonseed oil and shea butter. These were selected and combined via a proprietary method to **speed delivery of pain-relieving ingredients to the muscles and joints**.

Powerful Terpenes

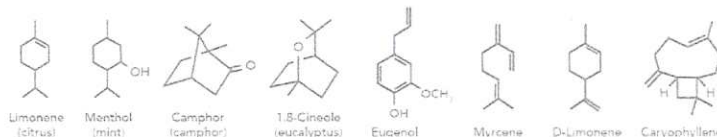
Terpenes (C₁₀H₁₆ molecules) produce analgesic action in acute and neuropathic pain by decreasing neuronal excitability through peripheral mechanisms⁽¹⁾. Menthol and Camphor are the two most widely used terpenes in topical pain management today. Terpenes are aromatic organic hydrocarbons found in the essential oils of plants. They produce the distinct aroma associated with each plant.

The therapeutic effects of terpenes are widely recognized

⁽²⁾. Other terpenes (essential oils) in our products—including Eucalyptus, Tea Tree, Clove, Peppermint and Rich-Hemp extract—are combined with Menthol and/or Camphor in a proprietary process. Independently, these terpenes are well-recognized for their benefits in reducing inflammation, muscle pain, nerve pain, stress, and overall pain management⁽³⁾.



The Natural Components Behind the Effectiveness of CBD CLINIC



After a decade of R&D, a major breakthrough in topical pain relief is now a reality.

CBD CLINIC over-the-counter, non-prescription ointments and creams are FDA-registered, made in an FDA-audited facility. They have provided remarkable relief to NFL players, other professional athletes and patients across the US since its introduction to health & wellness professionals earlier this year (2016).

Each formula has three (3) foundational components for supporting rapid and lasting relief from joint and muscle pain, associated with daily living, sports injuries, arthritis, sprains, bruises and related types of inflammation:

- 1) Natural Emollients
- 2) Powerful Terpenes
- 3) Endocannabinoid Modulators

1. Natural Emollients

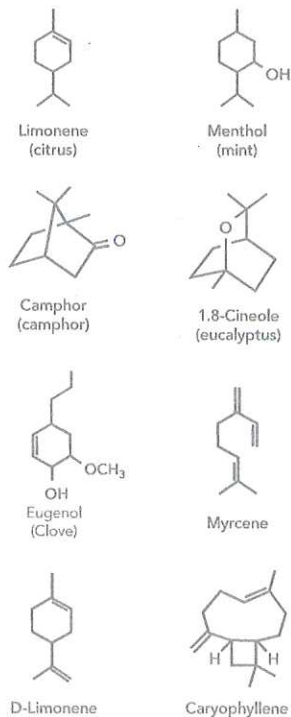
The base formulations of our ointments and creams are made with all-natural emollients that are readily absorbed by human skin. CBD CLINIC emollients include organic beeswax, jojoba seed oil, cottonseed oil, and shea butter. These were selected and combined via a proprietary method to help quickly deliver pain-relieving ingredients into the skin.

Comparatively, many other topical analgesic products use cheap, synthetic ingredients for their base, including benzyl alcohol, cetyl alcohol, diglycol stearate, glyceryl monostearate, petrolatum, etc.

2. Powerful Terpenes

Terpenes ($C_{10}H_{16}$ molecules) produce analgesic action in acute and neuropathic pain by decreasing neuronal excitability through peripheral mechanisms. Menthol and Camphor are the two most widely used terpenes in topical pain management today.

Terpenes are aromatic organic hydrocarbons found in the essential oils of plants. They produce the distinct aroma associated with each plant. The therapeutic effects of terpenes are widely recognized². Other terpenes (essential oils) in our products—including Eucalyptus, Tea Tree, Clove, Peppermint and Rich-Hemp extract—are combined with Menthol and/or Camphor to reach the deepest pain.



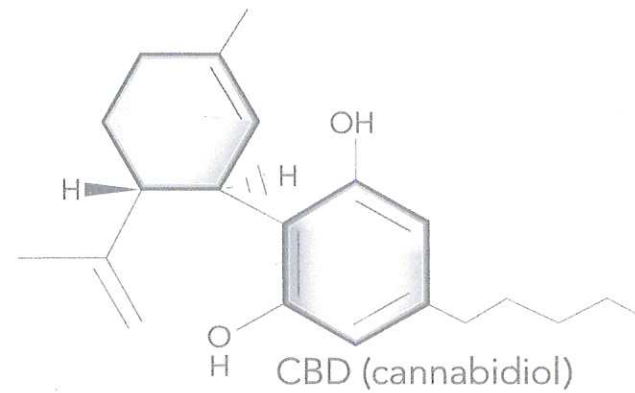
3. Endocannabinoid Modulators

In the mid-1990s, discovery of endocannabinoids enabled a major breakthrough in new therapies for reducing pain, inflammation and other ailments. The endocannabinoid system is a group of endogenous cannabinoid receptors located in the mammalian brain and throughout the central and peripheral nervous systems, consisting of neuromodulatory lipids and their receptors.

The endocannabinoid receptor system plays a significant role in regulating neurotransmitter function. One receptor that is being actively studied is called CB1. It is found in spinal and peripheral nervous tissue (including areas important for pain perception). Although research into modulation of the endocannabinoid system is still in its early phases, studies published in the British Journal of Pharmacology and elsewhere have reported that some terpenes have been identified as having allosteric modulator properties, capable of slowing down neurotransmitter signaling. These findings help us understand the therapeutic relevance and benefits that terpenes may have with pain perception and how they can support reductions in pain.

Summary

By formulating non-prescription analgesic creams and ointments with fast absorption properties, powerful deep pain relieving terpenes targeting endocannabinoid receptors, revolutionary pain management is now a reality.



Endocannabinoid Modulators

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The endocannabinoid receptor system **plays a significant role in regulating neurotransmitter function** ⁽⁴⁾. One receptor that is being actively studied is called CB1. It is found in spinal and peripheral nervous tissue (including areas important for pain perception) ⁽⁵⁾. Although research into modulation of the endocannabinoid system is still in its early phases, studies published in the British Journal of Pharmacology and elsewhere have reported that some terpenes have been identified as having allosteric modulator properties, **capable of slowing down neurotransmitter signaling** ⁽⁶⁾. These findings help us understand the therapeutic relevance and benefits that terpenes may have with pain perception and how they can support reductions in pain.

Summary:

By formulating FDA/DEA-compliant non-prescription analgesic creams and ointments combining natural, fast absorption properties with powerful deep pain-relieving terpenes targeting endocannabinoid receptors, revolutionary pain management is now available.

References:

- 1) Pan R1, Tian Y, Gao R, Li H, Zhao X, Barrett JE, Hu H. "Central mechanisms of menthol-induced analgesia". Journal of Pharmacology and Experimental Therapeutics. 2012 Dec; 343(3):661-72.
- 2) F. A. Santos and V. S. N. Rao. "Anti-inflammatory and Antinociceptive Effects of 1,8-Cineole a Terpenoid Oxide Present in many Plant Essential Oils". Phytotherapy Research 14, 240–244 (2000).
- 3) Damião Pergentino De Sousa. "Analgesic-like Activity of Essential Oils Constituents". Molecules 2011, 16(3), 2233-2252.
- 4) Pál Pacher, Sándor Bátkai, and George Kunos. "The Endocannabinoid System as an Emerging Target of Pharmacotherapy". Pharmacological Reviews. September 2006 vol. 58 no.
- 5) J Manzanares, MD Julian, and A Carrascosa. "Role of the Cannabinoid System in Pain Control and Therapeutic Implications for the Management of Acute and Chronic Pain Episodes". Current Neuropharmacology. 2006 Jul; 4(3): 239–257.
- 6) Laprairie RB, et al. "Cannabidiol is a negative allosteric modulator of the type 1 cannabinoid receptor." British Journal of Pharmacology. 2015 Jul 27.

The cannabidiol in all CBD CLINIC formulations is called Charlotte's Web®, The Worlds Most Trusted Hemp Extract™. Charlotte's Web defined the CBD category after it was featured on 3 CNN documentaries and many other national and global media outlets due to the miraculous impact it had on little Charlotte Figi's life. By growing their proprietary hemp genetics on US family farms and producing in an FDA registered facility in Boulder, Colorado under 3rd party certified Good Manufacturing Practices, the Stanley Brothers family ensures that quality and reliable consistency make Charlotte's Web the most premium CBD available in the marketplace.

CBD CLINIC has an exclusive partnership to produce and distribute topical medications with Charlotte's Web CBD.

For additional information or to purchase, please contact the company at 303-223-0863.

Visit our website www.cbdclinic.co or email us at support@cbdclinic.co