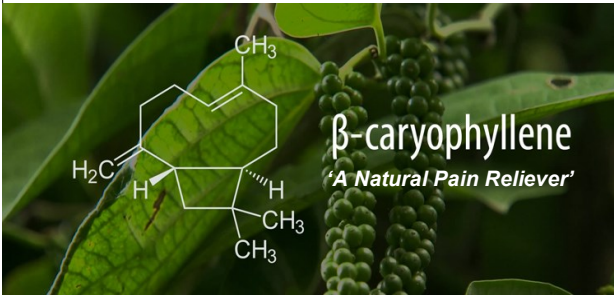


BCP90[®] Pain Balm

Made with PureNRG[™] 'Full Entourage' Oils



β-caryophyllene is scientifically proven to be 'superior than CBD' for fighting inflammation

Product Description

XNNGIE Lanka has developed a unique process to produce **PureNRG[™] 'Full Entourage'[™] Oils** as safe, legal alternatives to CBD oil. These phytocannabinoid-rich oils are standardised to high concentrations of **β-caryophyllene** [BCP] and other terpenes, renowned for their anti-inflammatory, anti-viral, antioxidant and anti-bacterial properties.

BCP90[®] PAIN BALM is a complex of Organic, CO2 extracted essential oils and ingredients with a high [>90%] content of **β-caryophyllene**. **β-caryophyllene** is a natural bicyclic sesquiterpene, a constituent of many essential oils, such as Clove, Black Pepper and Ceylon Cinnamon. **β-caryophyllene** is one of the main actives of the oil of Cannabis Sativa and is responsible for acting positively on pain receptors and inflammation.

β-caryophyllenes, strong anti-inflammatory effects, can directly bind exclusively to the CB2R receptor without the psychotropic effect which mediates the CB1R receptor. **β-caryophyllene** is a promising aid for management of inflammatory and neurogenic pain without the body developing a tolerance unlike classical pain remediation drugs. **β-caryophyllene** could be classified as a dietary cannabinoid-like substance that activates numerous receptors and downstream responses within the human body.

BCP90[®] PAIN BALM is a novel and exciting product that meets the need in the market for a proven and effective formula to combat pain and fight inflammation. Numerous studies show that **β-caryophyllene** has strong neuroprotective effects and is an immunomodulatory agent*.

β-caryophyllene is approved by the United States Food and Drug Administration (FDA) and the European Food and Safety Authority (EFSA) and is GRAS [generally recognised as safe] certified.

BCP90[®] PAIN BALM is a proprietary and synergistic blend of Organic Spices and ingredients of Sri Lankan Provenance. This precise complex of active ingredients has been specifically developed to answer both the needs of consumers in search of scientifically proven and effective products that fight inflammation and prevent pain by providing analgesic effects and relief from chronic neuropathic problems.

Topical Applications

Analgesic / Antinociceptive: the interaction between **β-caryophyllene** and the CB2 receptors induces an analgesic and pain-relieving action; particularly the peripheral tissues.

Neuroprotective: neuroprotective role of **β-caryophyllene**, by defending the nervous system from damage related to oxidative stress, inflammatory mechanisms and inducing an immunomodulatory action.

Chronic Inflammation: **β-caryophyllene** is able to exert its potent anti-inflammatory effects through multiple mechanisms mostly initiated by the binding of BCP to CB2 receptors.

BCP90[®] PAIN BALM The Legal Alternative to CBD

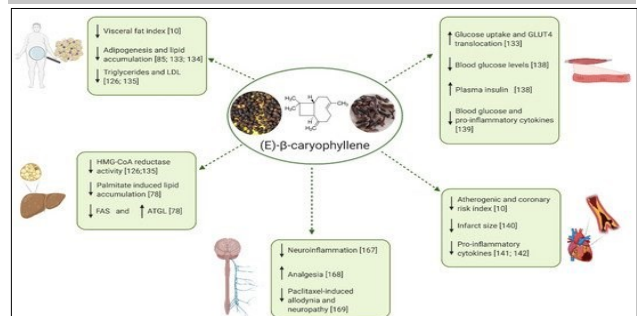
BCP90[®] PAIN BALM is a novel formula based on the continuing research on the health enhancing benefits of phytocannabinoids, specifically **β-caryophyllene**, in fighting pain and minimising the detrimental effects of chronic inflammation in the body.

β-Caryophyllene has the distinction of being the first known "dietary cannabinoid," a common component of food, that acts directly on the Endocannabinoid system [ECS] to positively benefit health and well being*

BCP90[®] PAIN BALM is a completely safe & legal alternative to using CBD or THC in topical applications.

ECOCERT and USDA Organic Certified

Anti-inflammatory benefits of Topical β-Caryophyllene



BCP90[®] PAIN BALM IS AN ORGANIC HERBAL FORMULA WITH HIGH CONTENT [>90%] OF β-CARYOPHYLLENE.

DISCOVER

DEVELOP

DIFFERENTIATE

DELIVER

BCP90[®] Pain Balm | A Natural Pain Reliever

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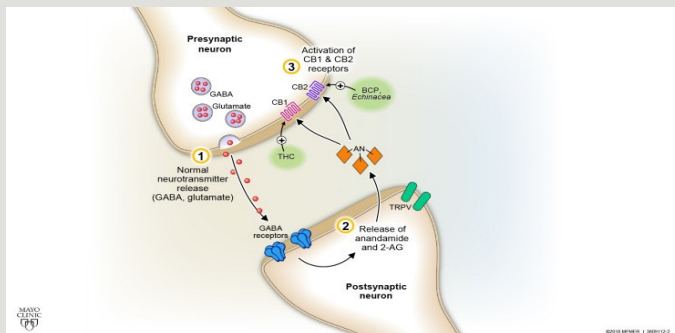
BCP90[®] Pain Balm, a natural pain reliever, is a complex of essential oils, terpenes, and constituents intended to support the function of the Endocannabinoid System [ECS] and improve the management of pain and inflammation. Due to its unique ability to bind with CB2 receptors, **β-caryophyllene** has been studied for its potent anti-inflammatory, antinociceptive, antimicrobial, antibacterial, and antioxidant properties. It is scientifically proven to be more effective than CBD alone in managing both pain and inflammation.

Ingredients List

Ingredient	Benefit
Black Pepper Oil <i>Piper nigrum</i>	Deemed the “king of spices” Black Pepper has been used in ancient Ayurvedic medicine for thousands of years due to its high concentration of potent, beneficial plant compounds. Black pepper is rich in a potent antioxidant called piperine, which may help prevent free radical damage to your cells. Black Pepper is naturally high in β-caryophyllene [$>10\%$] and has strong anti-inflammatory properties because of its ability to interact with the receptors that block the feeling of pain.
Cinnamon Leaf Oil <i>Cinnamomum zeylinicum</i>	Cinnamon has been a mainstay of ancient Ayurvedic medicine for thousands of years due to its high concentration of potent, beneficial plant compounds. Cinnamon essential oil contains a number of compounds that influence health. These compounds include cinnamaldehyde, which has been found to reduce inflammation and act as an antimicrobial . Cinnamon is also renowned for having antibacterial, antifungal, antidiabetic and antioxidant properties. Cinnamon contains up to [11%] β-Caryophyllene .
Clove Oil <i>Syzygium aromaticum</i>	Clove is one of the most ancient and valuable spices of the Orient, with its origin as old as the first century, before Christ. The anaesthetic effects of eugenol, the main component of clove, as well as its analgesic and anti-inflammatory effects have been well documented. Cloves have one of the highest antioxidant properties found in any other natural ingredient. Clove is renowned for its high content of Eugenol [70-95%] and β-Caryophyllene being [12-17%] of the total plant.
Ginger Oil <i>Zingiber officinale</i>	For thousands of years, Ginger has been used in folk medicine for its ability to combat inflammation . The main chemical constituents of Ginger are: Camphene, B-Phellandrene, α-Pinene, Geraniol, Zingiberene, β-Bisabolene, β-Sesquiphellandrene, and Curcumene. Camphene, α-Pinene & Curcumene are all known for their anti-inflammatory properties, while at the same time being soothing and helping to alleviate stress when dealing with pain management .
Peppermint Oil <i>Mentha piperita</i>	Peppermint oil contains high amounts [$>40\%$] of menthol, which has strong analgesic and anti-inflammatory properties. Menthol also has a cooling effect on sore, aching muscles and is proven very effective in relieving pain associated with overworked muscles. Studies show that L- Menthol has also been shown to significantly suppress the production of inflammation mediators indicating that menthol is an effective pain management option .
Citronella Oil <i>Cymbopogon nardus</i>	A native plant of Sri Lanka, Citronella Oil has been in use for thousands of years for its medicinal benefits. According to Ayurvedic scriptures, the main health and skin benefits of Citronella essential oil can be attributed to its strong anti-bacterial, antiseptic, and anti-inflammatory properties. This may be due to its high content of the terpene, Geronol, renowned as an analgesic to relieve pain and is also an effective topical drug enhancer.
Eucalyptus Oil <i>Eucalytus globulus</i>	Eucalyptus oil contains the terpenes α-pinene and 1,8-cineole and acts as an antioxidant , with strong radical scavenging activity. Studies have shown that administration of 1,8-cineole, which accounts for 70–90% (w/w) of the contents of eucalyptus oil, suppressed edema formation and reduced inflammation and pain . Studies also show that just by inhalation, Eucalyptus Oil is effective in the relief from pain, swelling and inflammation on post operative knee surgery.

In vitro and ex vivo studies show that β-caryophyllene is effective as:

- **Anti-inflammatory**
- **Neuroprotective**
- **Immunomodulator**
- **Antinociceptive**
- **Anti-bacterial**
- **Analgesic**



Ingredients List

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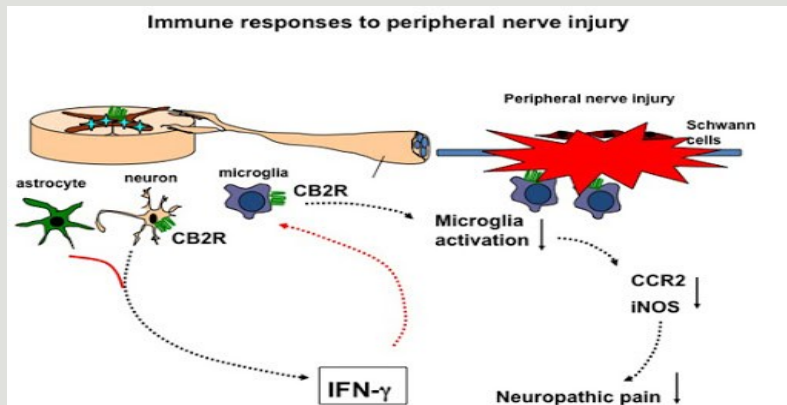
Ingredient	Benefit
Menthol Oil <i>Mentha piperita oil</i>	Menthol is one of the oldest known terpene compounds. Clinical research shows that menthol applied topically has a soothing and cooling effect on the skin. The mechanism behind this effect is menthol's unique ability to trigger specific receptors (TRPM8) in the skin that are cold-sensitive. This medication is used to treat minor aches and pains of the muscles/joints (such as arthritis, backache, sprains). Menthol is known as a counterirritant. It works by causing the skin to feel cool and then warm.
Virgin Coconut Oil <i>Cocos nucifera</i> (Coconut) Oil	Research has consistently shown that VCO has the potential to reduce inflammation in muscles and joints. The study, published in the journal Pharmaceutical Biology showed that virgin coconut oil has anti-inflammatory and analgesic properties. Simply by virtue of its high levels of lauric acid, coconut oil helps reduce inflammation – which directly impacts pain. Other studies have even found that extracts from coconut oil were just as effective as Indomethacin, a popular prescription pain medication.
Capsaicin (<i>Capsicum</i>)	Capsaicin, a compound from chili peppers, is well-known for its pain-relieving properties. It works by affecting the neurotransmitter that communicates pain signals to the brain. In this way, it can reduce the perception of pain. Capsaicin has been studied as an effective treatment in conditions such as: Arthritis, rheumatoid arthritis, osteoarthritis, fibromyalgia, Diabetic neuropathy. Capsaicin is also used as a possible treatment option for migraine, a condition characterised by extremely painful headaches and neurological symptoms.
Nutmeg Butter <i>Myristica fragrans</i> (kernel) Oil	Nutmeg is rich in anti-inflammatory compounds called monoterpenes, including sabinene, terpineol, and pinene. These may help reduce inflammation in your body and benefit those with inflammatory condition. Nutmeg's main active compound myristicin has also been studied for its anti-inflammatory abilities. Nutmeg research shown it to be a powerful anti-microbial, anti-inflammatory, antioxidant, antiseptic, and an anti-bacterial agent capable of reducing free radical damage including in skin cells and early signs of aging.
Beeswax <i>Cera alba</i>	As a medicine, beeswax has been studied in the use of relieving pain and inflammation and has mild anti-swelling effects. A 2014 study published in the Korean Journal of Internal Medicine reports that it was used to help relieve inflammation caused by osteoarthritis. Beeswax also has excellent antibacterial properties, helping keep things clean and reducing risks of contamination. This makes it a common ingredient in skin treatments, salves, balms and lotions, protecting other ingredients and acting as a preservative.

Mechanism Of Action

Active ingredients combined with **β-caryophyllene [BCP]** pass deep into the body muscle and nerve through the skin when applied to the painful area on the body. Unlike the main traditional cannabinoids, able to activate both Cannabinoid receptors CB1-R and CB2-R, **β-caryophyllene** has a very different chemical structure and it is a selective agonist of CB2-R. Furthermore, it has no side effects, not activating CB1-Rs (mainly expressed in the central nervous system, but also in the liver, lungs, heart, blood vessels and digestive tract). CB2-Rs are mainly found in peripheral tissues and in immune system cells (B and NK lymphocytes, macrophages, mast cells) and, to a lesser extent, in the central nervous system (brain, neurons, microglia). The expression of CB2-Rs in the central nervous system is increased in neurodegenerative pathologies, such as Parkinson's disease, Alzheimer's disease, amyotrophic lateral sclerosis (ALS) and in some tumours like gliomas. BCP is an effective and safe proven analgesic and, together with its anti-inflammatory properties, suggest it has prominent pain relieving ability*

Therapeutic Effects of Beta-caryophyllene*

β-caryophyllenes antinociceptive properties are effected through the skins Endogenous Surface Receptors. Topical application of the neuro-active compounds in **BCP90® Pain Balm** penetrate the skins epidermis to activate these surface receptors thereby providing therapeutic benefits from inflammation and pain relief*.



PRODUCT	BCP90® PAIN BALM
XNLANKA PRODUCT CODE	BCP90-PBM -7EO
Specification Details	
ORIGIN	Sri Lanka
COMPOSTITION	Organic, CO2 extracted essential oils of Eucalyptus [Eucalytus globulus], Citronella Oil [Cymbopogan nadius], Cinnamon Leaf Oil [Cinnamomum zeylinicum], Peppermint Oil [Mentha piperita], Ginger Oil [Zingibere officinale], Black Pepper Oil [Piper nigram], Complexed with fractionated Organic Clove Oil to obtain final composition. Menthol Oil [<i>Mentha piperita oil</i>], Virgin Coconut Oil [<i>Cocos nucifera (Coconut) Oil</i>], Capsaicin [<i>Capsicum</i>], Nutmeg Butter [<i>Myristica fragrans</i>] (kernel) Oil, Beeswax [<i>Cera alba</i>]
SHELF LIFE	24 months from Date of Manufacture
APPLICATION	BCP90® PAIN BALM stimulates the endocannabinoid receptors CB2-R, providing anti-inflammatory and natural analgesic effects. Several potential benefits as treatment for a wide range of health issues. BCP90® PAIN BALM is a complex of 12 Organic essential oil's and ingredients which all have potential therapeutic actions in both oral and topical use*.
PHYSICAL AND CHEMICAL CHARACTERISCTICS	
Specific Gravity	0.870— 0.980 @ 20C
Optical Rotation	-20— -40 @ 20C
Refractive Index	1.4500— 1.550 @ 20C
Solubility	Soluble in Ethanol insoluble in water
Appearance	Light Yellow / Amber
Physical Status	Clear Liquid
Aroma	Typical Spice / Unique Aromatic
Flash Point	> 75C
Flavour	Spice/ Refreshing
ASSAY BY GC-MS	LIMITS %
β-caryophyllene	NLT 90% RESULT 92%
Eugenol	2.00 - 5.00
1,8 - Ceneol	0.50 - 0.80
Geraniol	0.20 - 0.30
Menthol	0.40 - 0.70
A- Zingiberene	0.20 - 0.40

MICROBIOLOGICAL TOLERANCES

Free from Micro Organisms

PESTICIDE RESIDUES

QIA to USDA Standards

HEAVY METAL LIMITS

Arsenic [As]	< 3 ppm
Lead [Pb]	< 3 ppm
Cadmium [Cd]	< 1 ppm
Mercury [Hg]	< 0.1 ppm

PACKAGING AND STORAGE INSTRUCTIONS

Should be stored in tightly sealed containers. Protected from light & source of ignition. Packed in Aluminium Drums, GI Drums. Avoid long contact with Iron containers, heat and light.

STUDY REFERENCES

- [β-caryophyllene and β-caryophyllene oxide—natural compounds of anticancer and analgesic properties \(nih.gov\)](#)
- Topical Use of 20% Beta Caryophyllene Alone And In Combination With 0.025% Capsaicin for Pain Caused by Osteoarthritis Of The Knee. <https://clinicaltrials.gov/ct2/show/NCT03152578>
[The Endocannabinoid System, Cannabinoids, and Pain \(nih.gov\)](#)
- The Endocannabinoid System, Cannabinoids, and Pain [The Endocannabinoid System, Cannabinoids, and Pain \(nih.gov\)](#)
- [The 21+ Benefits Of Beta-Caryophyllene \(The Common Cannabinoid\) — MyBioHack | Unlock Your Maximum Potential](#)
- [β-caryophyllene and β-caryophyllene oxide—natural compounds of anticancer and analgesic properties \(nih.gov\)](#)
- https://www.researchgate.net/publication/269728671_Determination_of_b-caryophyllene_skin_permeationretention_from_crude_copaiba_oil_Copaifera_multijuga_Hayne_and_respective_oil-based_nanoemulsion_using_a_novel_HS-GCMS_method
- [β-Caryophyllene: A Sesquiterpene with Countless Biological Properties. https://www.mdpi.com/2076-3417/9/24/5420/htm](https://www.mdpi.com/2076-3417/9/24/5420/htm)
- Neuroprotective Effects of β-Caryophyllene against Dopaminergic Neuron Injury in a Murine Model of Parkinson's Disease Induced by MPTP <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5620604/>
- Role of β-Caryophyllene in the Antinociceptive and Anti-Inflammatory Effects of Tagetes lucida Cav. Essential Oil. <https://pubmed.ncbi.nlm.nih.gov/32033302/>
- <file:///E:/DATA-March2020/2019%20-%20BUSINESS/aaXYNRGIE%20Nutraceuticals%20Europe%20LTD/aaSri%20Lanka/EOAS%20ORGANICS/Beta%20Caryophyllene/Beta-caryophyllene%20exerts%20Analgesic%20Effects.pdf>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6983198/> [β-Caryophyllene, a CB2-Receptor-Selective Phytocannabinoid, Suppresses Mechanical Allodynia in a Mouse Model of Antiretroviral-Induced Neuropathic Pain]