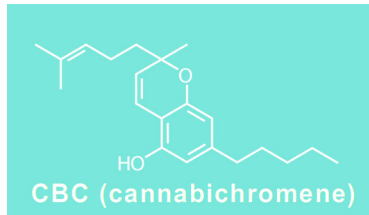


## CBC Research



### Abstract

CBC is an active chemical in marijuana. The role CBC continues to play in legal and medical cannabis starts from its chemical composition in marijuana. While CBC is not psychoactive, meaning users may not feel the effects, researchers are currently working on determining the potential benefits of CBC.

In terms of active chemical composition, the concentration of CBC found in cannabis plants is small, however the quantity may not decide the overall impact of this cannabinoid (active chemical).

### CBC Definition

CBC is short for cannabichromene, one of the many cannabinoids found in marijuana. The concentration of CBC is usually not found to be higher than 1% in the varieties of cannabis tested so far. CBC is one of the primary six cannabinoids that are responsible for most of the medical marijuana research. CBC was first discovered in 1966, researchers found that the CBC non-psychoactive substance may be responsible for several useful functions in combination with other cannabinoids.

### CBC Science

CBC is different than other psychoactive cannabinoids such as THC, because it is not intoxicating it is easier to justify for some people's medical use. THC binds to CB1 and CB2 receptors, many of which are responsible for creating relaxation and euphoria, whereas certain medical marijuana patients wish to not feel high when taking their medication, so a non-psychoactive cannabinoid may be preferred, such as CBC or CBD.

CBC found in marijuana plants do not adhere to the aforementioned receptors. Instead, CBC acts on TRPV1 receptors and TRPA1 receptors which interfere with the ability of endocannabinoids including chemicals such as anandamide and 2-AG.

## **Questions about CBC**

### **Why is CBC in such low concentrations compared to marijuana high in THC or CBD?**

Understanding how cannabinoids are produced is integral to knowing how CBC works in relation to the whole plant.

Three of the most prominent cannabinoids in marijuana - THC, CBD and CBC undergo a chemical change during their early stages of life, starting as first CBGA or Cannabigerol Acid (One of over 120 currently known cannabinoid compounds found in the plant genus Cannabis.)

Trichomes and enzymes together in the cannabis plant work to initiate a transformation of CBGA into other cannabinoids. A chemical process occurs that transforms the CBGA into THCA, CBDA or CBCA respectively.

While a large percentage of the CBGA will transform into THC, the plant also produces variable percentages of CBDA, CBCA and CBGA. Many of cannabis plants were today high levels of THC and CBD have been selectively bred to maximize THC or CBD production.

In a 1975 research study on cannabis plants by Holley, Hadley and Turner the CBC content accounts for 64% of the plant's cannabinoid profile. Scientists point out that the original study does not indicate whether the samples are derived from mature plants, but the idea of the dominant cannabinoid CBC leaves more to be learned.

### **CBC for Cancer?**

The role that marijuana and CBC can play in world health relates to the use of cannabinoids to destroy cancer cells. CBD do not attack cancer cells directly. On the contrary, CBC help to increase the amount of anandamide in the users body. Anandamide has showed real potential in the fight against breast cancer because it prevents the growth of new cells of blood vessels.

While THC has showed anti-tumor properties that researchers report similar effects to CBD. CBD is a potent inhibitor of cell growth of cancers. In addition to the CBD, CBG and CBC are but the strongest of cancer-fighting cannabinoids.

### **CBC for Breast Cancer?**

Studies show that CBC (cannabichromene) helps to raise the chemical count of com-

pounds that inhibit the growth of breast cancer cells. Future research should pave the way on whether CBC for breast cancer is suitable.

### **CBC for Brain Cells?**

Brain cells that provide nutrients to the nervous tissue, e.g. Astroglia, may assist in brain repair after injury and create an ion balance with support for the cells blood barrier.

The researchers found that CBC has a positive effect on the neural and stem cells which turn into cells such as astrocytes, neurons and more. This development of new brain cells, called neurogenesis, for brain function and health is essential and may support new efforts in CBC research.

### **CBC Medical Benefits?**

Knowing that CBC is found in marijuana at low concentrations, would using CBC for medical marijuana be the same as using CBD? Since the effects of non-psychoactive CBD cannabinoids like CBC are often preferred in the medical world, CBC may prove to be a suitable treatment application should further research shine a light on the medical benefits.

Although CBC has many of the same components that CBD has, the range of anecdotal reports may not give a clear answer at this point in time. The CBC value in a planted marijuana crop in general may serve as a player for the phenomenon of the influence of the environment and helps maximize the effects of cannabinoids and other natural substances in the brain.

If CBC is left isolated and studied in the laboratory, the individual effects are evident, but much is left to be discovered. Fighting inflammation to destroy cancer cells shows promise cannabichromene as an effective treatment for many diseases and disorders.

### **CBC as an Antidepressant?**

Research suggests that CBC and other cannabinoids may produce antidepressant effects. When scientists tested cannabinoids in mice, they found that the CBC and other cannabinoids antidepressant effects. Cannabinoids such as CBC, it may be because they help to raise the level of endocannabinoids anandamide, as in the brain. CBC may in fact be discovered to help as an antidepressant in future academic studies.

### **CBC for Antibacterials and Antifungals?**

Three anti-inflammatory properties present in CBC has shown that moderate antibacterial antifungal properties may in fact give CBC another use case. This was based on studies in rats as it remains to be seen whether these properties to human disease might be useful.

### **CBC for Antidiarrhea?**

While more research is needed for CBC as an antidiarrhea medicine, which could mean for people to use CBC for stomach issues, it would be a potentially useful treatment for people with diseases such as inflammatory bowel syndrome.

### **CBC as an Antiinflammatory?**

Cannabichromene has proven to be effective as an anti-inflammatory, analgesic and pain aid. Although not as effective as THC, some studies show cannabinoids relieve pain when combined together, perhaps a confirmation of the entourage effect. Researchers are studying whether cannabinoids as CBC may be a good alternative for opiate addiction.

### **CBC and Medical Marijuana for Pain?**

Researchers speculate that cannabichromene may be an effective anti-inflammatory analgesic and pain relief drug. More studies are needed to confirm this hypothesis.

### **CBC to Combat Acne?**

Although the titles tend to focus on the ability of marijuana to relieve pain and help with depression, researchers found CBC looking for another purpose, which is useful if it is not worthy news. The CBC in cannabis is very effective for treating acne. It helps reduce serum production in the skin and soothing inflammation, two of the main characteristics of the painful and unsightly outbreaks.

### **CBC and The Entourage Effect?**

The theory behind the effect of whether cannabinoids work much better as a group as they do when they are apart and used separately. The term was coined by Dr. Rafael Mechoulam, a pioneer who discovered cannabis THC and CBD. Cannabinoids react with the body's endocannabinoid system to accomplish a range of functions not all yet known to researchers. CBC helps increase the impact of other chemicals produced in

the body. Anandamide, for example, has shown to be helpful for treating depression. As CBC increases the amount of these substances in the body that work with the endocannabinoid receptors.

## **CBC Research Conclusions**

CBC (cannabichromene) may play an important role in the future of medical marijuana research. Medical marijuana researchers are encouraged to participate in academia regarding the CBC cannabinoid. For now, the CBC is part of ongoing research in medical marijuana.

### References

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