Cannabichromene (CBC)

Introduction and selected scientific references

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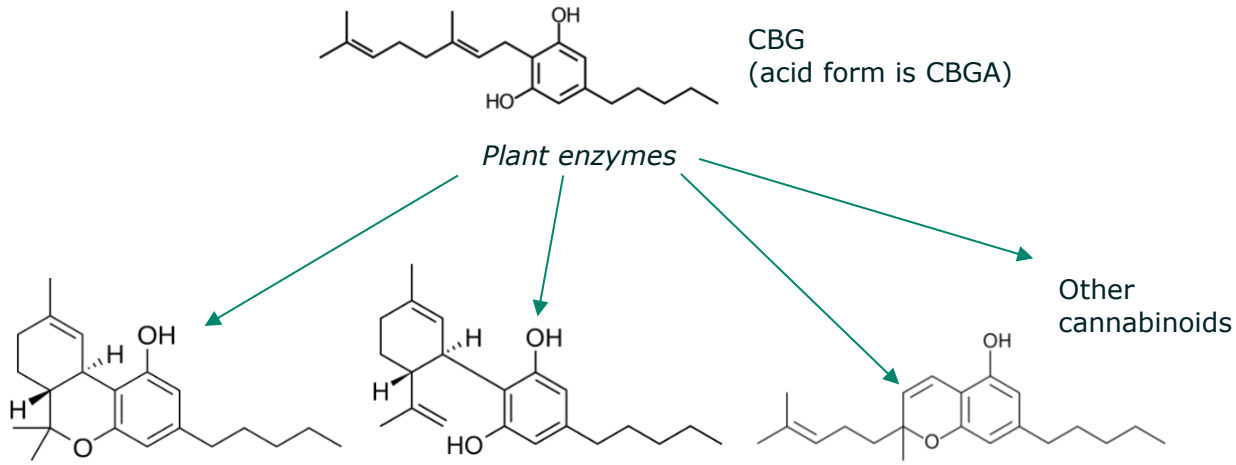
Introduction

CBC is one of the major cannabinoids produced in cannabis plants. However, it is sensitive to heat and light, so the CBC content of plants is variable. Also, since CBC is formed from the same precursor as the more common cannabinoids THC and CBD, its level is typically low in cannabis plants.



Plant cannabinoids are naturally produced in the acid form. Prior to consumption, they are typically converted into their better-known neutral form by heating. In this way, CBC is made from CBCA.

Potential benefits

As a non-psychotropic cannabinoid, there is growing interest in the study of CBC for a variety of therapeutic uses. Some of the areas of investigations are summarized below:

1. Antibacterial;
2. Acne;
3. Anti-inflammation;
4. Analgesia (pain relief);
5. Antidepressant;
6. Neuroregeneration;
7. Epilepsy;
8. Cancer;
9. Irritable bowel syndrome (IBS).

Scientific literature

Subject	Quotation	Ref.
Antibacterial	"All five major cannabinoids (cannabidiol (1b), cannabichromene (2), cannabigerol (3b), Delta (9)-tetrahydrocannabinol (4b), and cannabinol (5)) showed potential activity against a variety of methicillin-resistant Staphylococcus aureus (**MRSA**) strains of current clinical relevance."	1
	"Cannabichromene and some of its homologs, analogs, and isomers were evaluated for anti-inflammatory, antibacterial, and antifungal activity…**Antibacterial** activity was strong."	2
Acne	"CBC, CBDV and especially THCV show promise to become highly efficient, novel **anti-acne agents**."	3
Anti-inflammation	"Cannabichromene and some of its homologs, analogs, and isomers were evaluated for anti-inflammatory, antibacterial, and antifungal activity…CBC was superior to phenylbutazone [in **anti-inflammatory activity**]."	2
	"CBC is a selective CB2 receptor agonist displaying higher efficacy than tetrahydrocannabinol in hyperpolarizing AtT20 cells…CBC may contribute to the potential therapeutic effectiveness of some cannabis preparations, potentially through CB2 receptor-mediated modulation of **inflammation**."	4
	"Cannabichromene exerts **anti-inflammatory** actions in activated macrophages – with tonic CB1 cannabinoid signaling being negatively coupled to this effect – and ameliorates experimental murine colitis."	5
	"CBC was tested using the rat paw edema test and using the erythrocyte membrane stabilization assay. CBC was as effective as phenylbutazone (PBZ) at equivalent doses. Since CBC is less toxic than PBZ, larger doses may be given to produce a greater therapeutic effect."	6
Analgesia (pain relief)	"CBD and CBC stimulated descending pathways of antinociception and caused **analgesia** by interacting with several target proteins involved in nociceptive control. These compounds might represent useful therapeutic agents with multiple mechanisms of action."	7
	"Cannabinoids can activate TRPA1, TRPV1, and TRPV2, and functionally antagonize TRPM8 receptors in a manner dependent on their chemical structure…with CBC being the most potent at TRPA1 and the least potent at antagonizing TRPM8…These results are relevant to the analgesic, anti-inflammatory and anti-cancer effects of cannabinoids and *Cannabis* extracts."	8

Subject	Quotation	Ref.
Antidepressant	"Cannabichromene (CBC) and cannabidiol (CBD) exhibited significant effect at 20 and 200 mg/kg, respectively…Results of this study show that Delta(9)-THC and other cannabinoids [CBC and CBD] exert **antidepressant**-like actions, and thus may contribute to the overall mood-elevating properties of cannabis."	9
Neuroregeneration	"CBC has a positive effect on the viability of mouse NSPCs [neural stem progenitor cells] during differentiation in vitro…Taken together, our results suggest that CBC raises the **viability of NSPCs** while inhibiting their differentiation into astroglia."	10
Epilepsy	"**Anticonvulsant** efficacy was evident with CBC [Cannabichromene], CBCA [cannabichromenic acid], and CBCVA [cannabichromevarinic acid]…Since CBC and derivatives are anticonvulsant in a model of intractable pediatric epilepsy, they may constitute part of the mechanism through which artisanal cannabis oils are anticonvulsant in patients."	11
Cancer	"We aimed to identify cannabis compounds and their combinations presenting cytotoxicity against **bladder urothelial carcinoma** (UC), the most common urinary system cancer…Synergistic interaction was demonstrated between CBC + THC."	12
Gastronintestinal motility (IBS)	"CBC selectively reduces inflammation-induced hypermotility *in vivo* in a manner that is not dependent on cannabinoid receptors or TRPA1."	13

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