



Cannabichromene (CBC)

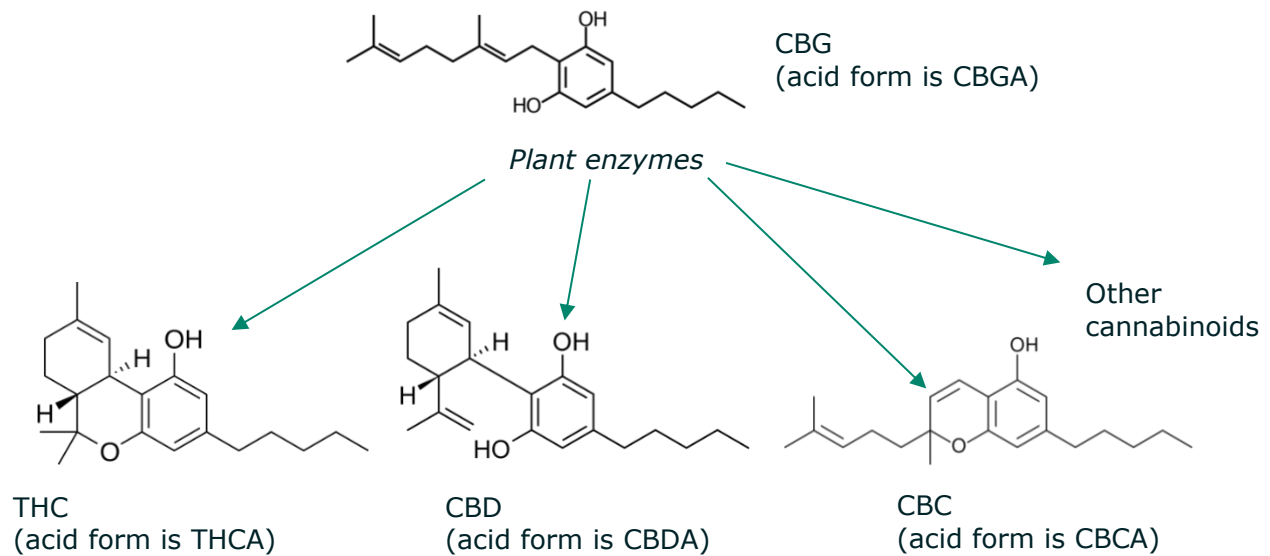
Introduction and selected scientific references

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Cannabichromene (CBC)

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-psychoactive 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. Neuro(de/re)generation;
7. Epilepsy;
8. Cancer;
9. Irritable bowel syndrome (IBS);
10. Respiratory distress;
11. Mood disorders;
12. Covid-19.

Scientific literature

Subject	Quotation	Ref.
Antibacterial	"All five major cannabinoids (cannabidiol (1b), cannabichromene (2), cannabigerol (3b), Delta (9)-tetrahydrocannabinol (4b), and cannabiol (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
	"These data demonstrate a positive drug-drug interaction with a silver- containing medicament used in combination with a cannabinoid, in particular illustrating a stronger antibiotic effect when using CBC in combination with silver nitrate in MRSA bacteria, compared to the antibiotic effect of using either compound on its own."	3
Acne	"CBC, CBDV and especially THCV show promise to become highly efficient, novel anti-acne agents ."	4
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 ."	5
	"Cannabichromene exerts anti-inflammatory actions in activated macrophages – with tonic CB1 cannabinoid signaling being negatively coupled to this effect – and ameliorates experimental murine colitis."	6
	"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."	7
	"Because cannabinoids are well documented to possess anti-inflammatory properties, we examined CBC, THC, and combination of both phytocannabinoids in the lipopolysaccharide (LPS) paw edema assay. CBC elicited activity in the tetrad that was not blocked by the CB ₁ receptor antagonist, rimonabant."	8

Subject	Quotation	Ref.
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."	9
	"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 <i>Cannabis</i> extracts."	10
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."	11
Neuro(de/re)-regeneration	"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."	12
	"The applicants have discovered that further cannabinoids [cannabichromene (CBC), and cannabidivarin (CBDV)] are able to prevent or treat neurodegenerative diseases or disorders...The model of neurodegenerative disease exemplified by the applicants is Alzheimer's disease."	13
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."	14
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."	15
Gastronintestinal motility (IBS)	"CBC selectively reduces inflammation-induced hypermotility <i>in vivo</i> in a manner that is not dependent on cannabinoid receptors or TRPA1."	16
Respiratory distress	"Our findings suggest that inhalant CBC may be an effective alternative therapeutic target in the treatment of ARDS [acute respiratory distress syndrome]."	17

Subject	Quotation	Ref.
Mood disorders	"[I]t has been found that cannabichromene (CBC) and cannabichomene type compounds...appear to be a new class of compounds that may be useful in the treatment of mood disorders, particularly depression."	18
Covid-19	"Among the studied phytoligands, cannabigerolic acid (2), cannabigerol (8), and its acid methyl ether (3) possessed the highest binding affinities to SARS-CoV-hACE2 complex essential for viral entry. Canniprene (24), cannabigerolic methyl ether (3) and cannabichromene (9) were the most promising M ^{Pro} inhibitors. These non-psychoactive cannabinoids could represent plausible therapeutics with added-prophylactic value as they halt both viral entry and replication machinery."	19

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