PLANTS & HERBS

6 Plants other than Cannabis that are High in Cannabinoids

By bestfolkmedicine · 17/08/2018 · 4 min read



Cannabis isn't the only species that makes molecules able to **activate the human endocannabinoid system (ECS)**. Several other plants (and even a non-vascular plant) produce **phytocannabinoids** or **cannabimimetic** compounds that bind to cannabinoid receptors (CB /CB) or modulate ECS enzymes. Below are six noteworthy examples, what they contain, and why they matter.

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1) *Radula marginata* (New Zealand liverwort) — Perrottetinene (PET)

A small liverwort native to Aotearoa/New Zealand makes **perrottetinene**, a **bibenzyl cannabinoid** that is **structurally and pharmacologically similar to THC** but appears **less psychoactive**. PET **binds CB** and shows central effects in preclinical work, offering a rare non-Cannabis source of a bona-fide cannabinoid scaffold.

Why it matters: PET gives scientists a comparative tool to study ECS signaling and may inspire **THC-like medicines** with a gentler psychoactive profile (research is still early).

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2) *Helichrysum umbraculigerum* (woolly umbrella; South Africa) — Cannabis-style cannabinoids in the leaves

This daisy-family plant has stunned botanists: it **biosynthesizes cannabinoids (including CBG-type)** in **leaf tissue**, using **convergent pathways** distinct from Cannabis. Early peer-reviewed and institutional reports (Weizmann Institute) describe **cannabinoid production outside the Cannabaceae family**, potentially simplifying cultivation and harvest compared with resinous Cannabis flowers.

Why it matters: A non-Cannabis plant that makes cannabinoids could widen research access and might yield **novel cannabinoid chemotypes** or more scalable bioproduction. (This is an **active research area**, not clinical evidence.)

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3) *Echinacea* spp. (coneflowers) — N-alkylamides that signal via CB_2

Roots and aerial parts of several *Echinacea* species contain **N-alkylamides (NAAs)** that **interact with CB receptors** and modulate ECS signaling, helping explain some of Echinacea's **immune-modulating** effects observed in vitro and ex-vivo. Studies show NAAs can **bind or bias CB** and alter cytokine profiles, with activity predicted by each extract's phytochemistry.

Why it matters: While not classical cannabinoids, Echinacea NAAs are **cannabimimetic** at CB —relevant for **inflammation and immune tone**. Human data are still limited, so think "supportive" rather than "treatment."

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4) Black pepper (***Piper nigrum***) — -Caryophyllene, a dietary CB_2 agonist

The spicy terpene **-caryophyllene (BCP)** is abundant in **black pepper** (also clove, oregano, hops). Landmark work in *PNAS* identified BCP as a **selective CB receptor agonist**—a **non-psychoactive phytocannabinoid** with anti-inflammatory and analgesic effects in animal models. Later reviews confirm **oral BCP** acts via CB to dampen inflammatory pain.

Why it matters: Because BCP is common in culinary herbs and essential oils, it's often called a **"dietary cannabinoid."** It targets **CB (immune, peripheral tissues)** without CB -driven intoxicating effects—an appealing safety profile for future nutraceuticals (pending clinical trials).

5) ***Acmella oleracea*** (spilanthes, "toothache plant") — Alkylamides hitting CB targets

Famed for its mouth-tingling "buzz," *Acmella* contains **alkylamides** (e.g., spilanthol) that **interact with CB /CB and TRPV1** in molecular docking and preclinical assays, showing **antinociceptive (pain-relieving)** activity in vivo. While docking clinical proof, convergent evidence suggests *Acmella* 's analgesia taps **cannabinoid pathways**.

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Why it matters: A culinary/medicinal herb with **CB-linked analgesic** potential could complement topical or oral formulations for minor pain—subject to rigorous safety/efficacy testing.

6) ***Rhododendron dauricum*** — Daurichromenic acid (DCA), a cannabinoid-type meroterpenoid

Young leaves of this rhododendron accumulate **daurichromenic acid (DCA)**, a **terpenophenolic** structurally related to **cannabichromene (CBC)-type** cannabinoids. Researchers have isolated the **DCA synthase** enzyme and mapped steps of this **non-Cannabis cannabinoid pathway**; DCA shows **anti-HIV** activity in vitro and represents an **independent evolutionary route** to cannabinoid-like chemistry.

Why it matters: Rhododendron work broadens the cannabinoid landscape and may seed **novel antiviral or neuroactive leads** distinct from THC/CBD families.

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What "high in cannabinoids" really means (and what it doesn't)

Outside Cannabis, **absolute concentrations** of classical cannabinoids are usually **lower**, and many plants make **functionally similar** compounds rather than THC/CBD themselves. Still, these species **engage the ECS**—by **activating CB receptors**, **mimicking endocannabinoids**, or **influencing ECS enzymes**—and that's what underpins their effects.

- **CB -preferring molecules** (e.g., -caryophyllene; Echinacea NAAs) tend to be **non-intoxicating** and **immunomodulatory**.
- **CB -active compounds** (e.g., perrottetinene) may have **central effects**, though generally milder than THC (preclinical).

Safety & practical use (holistic perspective)

- **Evidence stage varies.** Most findings are **preclinical** or early mechanistic studies. Treat them as **leads**, not therapies.
- **Interactions:** ECS-active botanicals may **potentiate sedatives, analgesics, anticoagulants**, or immunomodulators. If you take medications, **check with your clinician**.

- **Quality matters:** If exploring culinary sources (pepper, oregano, clove) for **-caryophyllene**, whole spices and reputable essential oils (for aromatherapy, not ingestion unless labeled and guided) are typical routes. Supplements should be **third-party tested**.
- **Research opportunities:** Helichrysum and Radula are **research plants**, not over-the-counter remedies.

Bottom line

The ECS is **far larger than Cannabis**. From **New Zealand liverwort** to **black pepper** and **Echinacea** , multiple plants make molecules that **bind CB receptors or modulate the ECS**—some with real therapeutic promise (especially **CB -selective** compounds for inflammation and pain). As research matures, these species could help **diversify cannabinoid-based wellness** beyond THC and CBD.

Sources

- **Radula / perrottetinene (PET):** Chicca et al., *Sci. Adv.* (2018); recent overview on **Radula** cannabinoids. science.org
- **Radula marginata review (2024):** Andre et al., unique bibenzyl cannabinoids in liverworts. PMC
- **Helichrysum umbraculigerum** makes cannabinoids in leaves (Weizmann/Phys.org; LabRoots explainer). phys.org
- **-Caryophyllene (black pepper, clove, oregano, hops):** Gertsch et al., *PNAS* (2008); Aly et al., *Molecules* (2019) review; Klauke et al., *Eur J Pain* (2014). pnas.org
- **Echinacea NAAs & CB :** Raduner et al., *J. Biol. Chem.* (2006); Liu et al., *Front Pharmacol.* (2021) extract–CB data; Chicca et al., *Int Immunopharmacol.* (2009). jbc.org
- **Acmella oleracea** alkylamides, CB docking & antinociception. PubMed

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