



GREEN SOLUTIONS FOR BETTER A FUTURE

YOUR PARTNER IN SUPERCRITICAL CO₂ TECHNOLOGY

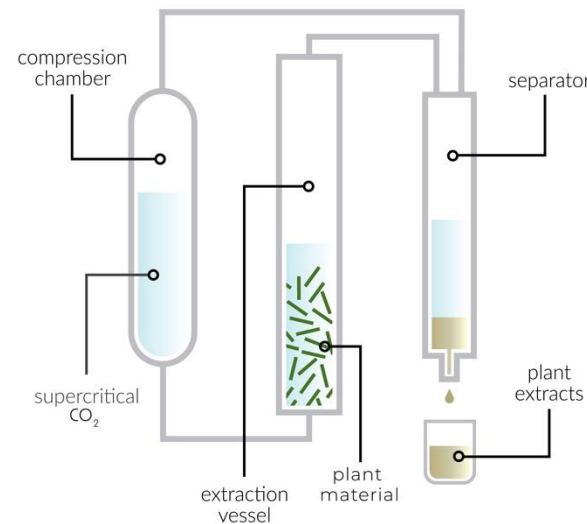
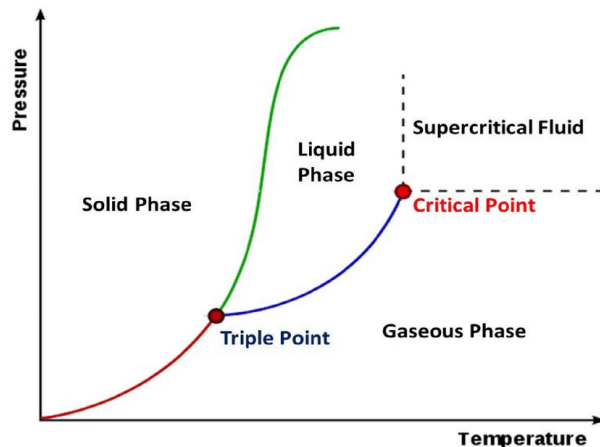
LUKBOTANIK

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Introduction to Supercritical CO₂

Supercritical CO₂ extraction is an **advanced solvent free** and **environmentally friendly extraction** technique that uses carbon dioxide (CO₂) in its supercritical state to selectively extract bioactive compounds from **plant materials**.



A supercritical fluid exists between a gas and a liquid state, achieved by applying **precise temperature** and **pressure**. In this state, CO₂ behaves like a gas in terms of penetration but retains the dissolving power of a liquid. This unique characteristic allows it to extract with **high efficiency** and **zero solvent contamination**.

Key Advantages of Supercritical CO₂ Extraction

1. Solvent-Free & Pure Extraction

Unlike traditional methods, no solvent residue.



2. Superior Product Quality

Preserves flavors, bioactives and volatile compounds.



3. Eco-Friendly & Sustainable

- Reduces reliance on petroleum-based solvents, minimizing environmental impact and carbon foot print.
- CO₂ is recyclable, making the process more sustainable.



4. Safe & Non-Hazardous

- CO₂ is non-flammable and non-toxic.
- Spent plant material is non-toxic and can be reused for other purposes.



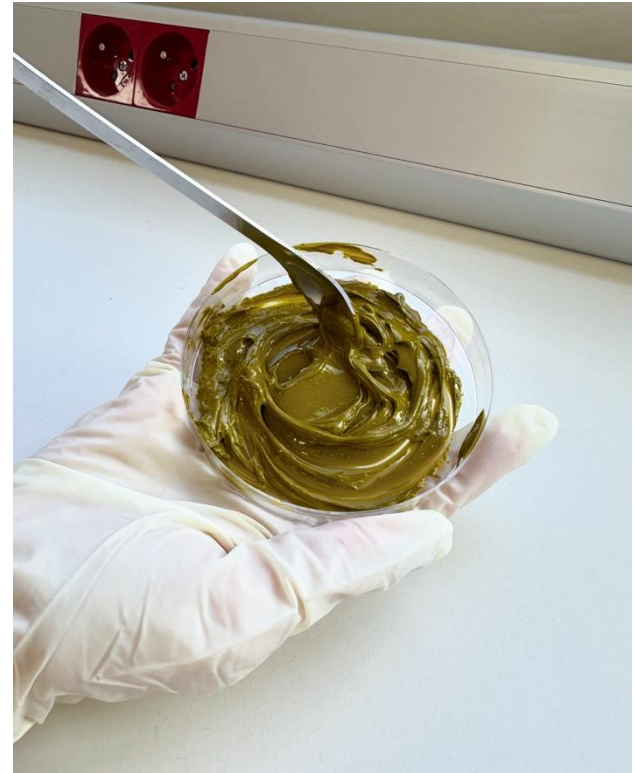
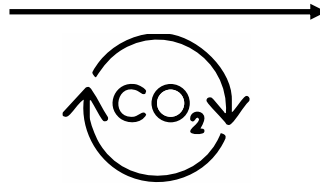
As Pure and Natural as It Gets -Supercritical CO₂ Extraction



Sustainable source premium raw materials

Echinacea angustifolia L.

Our proprietary
SFE technology
preserves the full
spectrum of
bioactive
compounds,
maintaining the
plant's natural
integrity.



PhytoXtrakt® **Echinacea**

Echinacea angustifolia L. Flower CO₂ extract

SFE (Supercritical CO₂) Extracts vs. Conventional Extracts

	SFE Extracts (Supercritical CO₂)	Conventional Extracts (Solvent/Steam/Cold Press)
Solvent Used	Carbon dioxide (CO ₂) — non-toxic, inert, leaves no residue	Organic solvents (ethanol, hexane), water, or steam
Purity	Extremely high; no solvent residues, minimal contaminants	Risk of solvent residues, impurities, or thermal degradation
Selectivity	Highly selective — can target specific compounds by adjusting pressure/temp	Less selective — extracts a broad range of compounds
Temperature Sensitivity	Low-temperature process preserves heat-sensitive bioactives	High heat or aggressive solvents can degrade compounds
Environmental Impact	Eco-friendly, recyclable CO ₂ , no water waste	Often involves toxic solvents and generates waste
Yield Quality	Rich in lipophilic compounds (e.g., essential oils, waxes, antioxidants)	May lack full-spectrum actives or contain unwanted materials
Stability	Longer shelf life due to low oxidation	Shorter shelf life depending on solvent and method used
Application	High-end cosmetics, nutraceuticals, food supplements	Mass-market cosmetics, herbal tinctures, essential oils

Industries We Serve



Cosmetic Ingredients



Dietary Supplements



Pharmaceuticals



Food & Beverage Ingredients

Why Partner with LUK BOTANİK?

We envision a future where botanical ingredients are sourced and processed with the highest **respect for nature, human health, and scientific integrity**.

LUK BOTANİK is dedicated to making sustainable extraction the industry standard, proving that high performance and environmental responsibility can go hand in hand.



**LUK BOTANİK LOCATED AT THE
TÜBİTAK MAM TECHNOLOGY FREE ZONE CAMPUS**



TÜBİTAK MAM is one of the leading organizations of the advanced technology world thanks to its ability and capacity of research, research infrastructure and world class administrative and operational process management.

As LUK BOTANİK, we are advancing in research and innovation through the projects we develop in collaboration with TÜBİTAK MAM.

Why Partner with LUK BOTANİK?

Our dedication to quality is at the core of everything we do. We operate in GMP-certified cleanroom environments, ensuring that our supercritical CO₂ extracts meet the **highest standards for purity, safety, and consistency.**



LUK BOTANIK LABORATORY

Why Partner with LUK BOTANİK?

We only **select high-quality raw materials** based on stringent analytical criteria and verified phytochemical profiles.

Together with our customers, we are elevating today's products and shaping the future of botanical solutions.



PhytoXtrakt® **Thyme**



PhytoXtrakt® **Seabuckthorn**



Stages of Production



Our CO₂ Extracts

PhytoXtrakt®

Our botanical extracts deliver the purest, most potent form of nature. Free from harmful solvents and produced under GMP cleanroom standards, these extracts retain the full spectrum of active compounds — including essential oils, lipophilic molecules, and bioactive constituents — for maximum efficacy and safety.

PhytoXtrakt® **Thyme**

PhytoXtrakt® **Sage**

PhytoXtrakt® **Licorice**

PhytoXtrakt® **Plantain**

PhytoXtrakt® **Sumac**

PhytoXtrakt® **Rosemary**

PhytoXtrakt® **Chamomile**

PhytoXtrakt® **Cinnamon**

PhytoXtrakt® **Echinacea**

PhytoXtrakt® **St.John'sWort**

PhytoXtrakt® **Elderberry**

PhytoXtrakt® **LemonBalm**

PhytoXtrakt® **Valerian**

PhytoXtrakt® **Zahter**

PhytoXtrakt® **ZahterWAX**

PhytoXtrakt® **OliveLeaf**

PhytoXtrakt® **Lavender**

PhytoXtrakt® **LavenderWAX**

PhytoXtrakt® **NettleLeaf**

PhytoXtrakt® **BayLeaf**

PhytoXtrakt® **Seabuckthorn**

PhytoXtrakt® **Capsicum**

PhytoXtrakt® **BlackCumin**

PhytoXtrakt® **Peanut**

PhytoXtrakt® **PumpkinSeed**

PhytoXtrakt® **Almond**

Our Plant-Based Proteins

LUPurePRO™

Our plant-based proteins are extracted using advanced supercritical CO₂ technology, ensuring maximum purity without the use of chemical solvents or high heat. This method allows us to gently remove excess fats while preserving the full nutritional integrity and natural goodness of the plant.

The result: A clean, highly bioavailable protein source — rich in amino acids, free from unwanted residues, and ideal for functional foods, supplements, and active lifestyles. Sustainably sourced and minimally processed, our proteins deliver both performance and purity, straight from nature.

LUPurePro™-**Pumpkin Seed**

LUPurePro™-**Almond**





GET IN CONTACT WITH US TODAY.

LUK BOTANİK END. VE TİC. AŞ

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