Benefits of Eucalyptol

Benefits of eucalyptol include preventing and healing ulcers, increases cerebral blood flow, reduces inflammation, inhibits tumor necrosis, helps treat bronchitis and sinusitis, and is antimicrobial and insecticidal.

Eucalyptol, also known by a chemical name of *1,8-cineole* or *1,8-cineol*, is found in a variety of essential oils, including:

- Eucalyptus
- Melaleuca
- Basil
- Rosemary
- Sage
- Peppermint

Eucalyptol is a colorless liquid with a mint-like aroma often found in mouthwashes and cough suppressants. It inhibits cytokines from causing inflammation which helps to reduce cold, flu and asthma symptoms.

Benefits of Eucalyptol

Scientists have performed many studies to verify the medicinal benefits of eucalyptol. Here are a few of studies that help show the effectiveness of eucalyptol.

Benefits of Eucalyptol in Asthma

An article (Anti-inflammatory activity of1.8 -cineol (eucalyptol) in bronchial asthma: a double-blind placebo-controlled trial) in the journal *Respiratory Medicine* describes a study to determine the effectiveness of eucalyptol (1.8 -cineol) in helping to alleviate asthma symptoms.

Thrity-two bronchial asthma patients participated in a randomized, placebo controlled study to determine the

usefulness of cineol therapy. The patients were taking between 5 and 24 mg prednisolone daily as a maintenance dose. These patients were randomly assigned to take 200 mg capsules of cineol three times a day, or placebo capsules.

All participants were monitored for their use of their maintenance prednisolone inhalers and short-acting bronchodilators. They were asked to reduce their prednisolone maintenance dose in small steps to determine a level of tolerance.

The results of the study showed clear benefits of those taking cineol.

- **Dose reduction**. Cineol users reduced their dose by an average of 3.75 mg per day compared to the plecebo group of 0.91 mg per day.
- **Reduction steps**. The number of dose reduction steps among cineol users was 27 while placebo users only reduced their doses by 5 steps.
- **Days stable**. The average number of days cineol users were stable on their reduced dose was 36.6 while the placebo group was stable for only 8.3 days.

These differences were all highly significant ($p<0.006$). The author concludes that the "clinically relevant anti-inflammatory activity of the terpenoid oxide 1.8 -cineol and offers new perspectives for its long-term therapeutic use in airway diseases, such as asthma."

Benefits of Eucalyptol in Gastric Ulcer Prevention and Healing

An article (Gastroprotective Mechanisms of the Monoterpene 1,8-Cineole (Eucalyptol)) in the journal *PLOS|One* reported on a series of experiments to investigate the ulcer healing properties of 1,8-cineole (eucalyptol).

The researchers induced ulcers in male and female Wistar rats.

They orally gave the rats ulcer inducing substances such as:

- Ethanol
- HCl/ethanol
- Nonsteroidal anti-inflammatory drug (NSAID)

In an experiment with HCl/ethanol, the rats fasted for 24 hours. Then the researchers gave the rats one of the following treatments:

- The placebo control group received a 1% Tween-80 aqueous solution.
- They gave another group pantoprazole (a standard medicine that helps prevent ulcers) at 40 mg/kg (i.e., 40 mg of pantoprazole per kg of body weight).
- The researchers gave three experimental groups varying doses of eucalyptol (50, 100 and 200 mg/kg).

An hour after these treatments, the researchers gave all the rats the HCl/etanol solution (1 mL/150 g) to induce gastric lessions. Then after one hour the rats were humanely sacrificed and their stomachs were examined for ulcer lesions.

The results of this experiment showed that eucalyptol produced a significant level of gastroprotection. The area of the lessions in the control group averaged 245.5 ± 43.0 mm^2. The area of the lessions in the eucalyptol groups depended on the dose level. In the group receiving 50 mg/kg, the area was 28.2 ± 12.8 mm^2. In the group receiving 100 mg/kg, the area was 11.8 ± 5.4 mm^2. And in the group receiving 200 mg/kg, the are was 1.3 ± 0.8 mm^2.

Eucalyptol resulted in a 88.5%, 95.2% and 99.4% reduction in lession area, depending on the dose. The standard ulcer protective medicine, pantoprazole, resulted in a 91.5% protection.

The authors conclude that “pretreatment with CIN [eucalyptol] protected the rats’ gastric mucosa against ethanol- and acidified ethanol-induced ulcer.” In other experiments the results demonstrated that eucalyptol not only protected against developing ulcers, it also had a regenerative effect that helped speed healing of chronic ulcers. The authors describe 1,8-cineole as an important healing agent.

Benefits of Eucalyptol in Colorectal Cancer

An article (Antitumor effect of 1, 8-cineole against colon cancer) in the journal *Oncology Reports* describes a series of experiments on colon cancer. In this series of experiments the researchers used human colorectal cancer cell lines HCT116 and RKO.

Cell viability assay: In one of the experiments using cultured cells, the researchers placed cells on 96 plates and incubated the cells overnight. Then 1, 8-cineole or oxaliplatin (a chemotherapy drug) were added at various concentrations. After 24 hours the cells were examined for viability. The results showed that the for both cancer cell lines the growth was significantly ($p<0.01$) inhibited in a dose dependent manner by 1, 8-cineole.

Animal study: The experimenters separated mice into a control group and a 1, 8-cineole group. They injected all mice with RKO cells in the right flank. One week after the RKO injection the 1, 8-cineole group started receiving 1, 8-cineole at a rate off 50 mg/kg every three days. While tumors grew in both groups, the tumors in the 1, 8-cineole group were significantly ($p<0.01$) smaller.

The authors conclude that “by triggering apoptosis in human colorectal cancer cells *in vitro* and *in vivo.* 1, 8-cineole shows promise as a strong and safe chemotherapeutic agent for colorectal cancer.”

Further Research

Research into the benefits of eucalyptol continues. A few of the ongoing studies include:

- Clinical and Microbiological Effects of an Essential Oils Solution Used as an Adjunct to Daily Oral Hygiene Practices in Chronic Periodontitis Patients in Supportive Care (Listerine) This study's goal is to thoroughly document the clinical and microbiological effects of an essential oils solution used on a daily basis for 3 months as an adjunct to mechanical plaque control measures in a large number of chronic periodontitis patients in supportive care.
- Clinical Evaluation of Some Local Antimicrobial Agents' Adjunctive Effects On Periodontal Parameters and Halitosis This study is to establish the clinical efficacy of Listerine and chlorhexidine (CHX) when used as a cooling agent with ultrasonic instrumentation, on periodontal parameters and halitosis.
- Chemotherapy-Induced Peripheral Neuropathy-Essential Oil Intervention (CIPN-EOI) This study will evaluate an oil blend with active ingredients [including cineole] for the reduction in chemotherapy-induced peripheral neuropathy in people with breast cancer.

Scientific research has shown and continues to show the benefits of eucalyptol for a variety of medical conditions. This component of various essential oils has proven its usefulness.