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### Review

## CURCUMET CAPSULES; An effective Supplementation for various life style disorders & as a potent Antioxidant.

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	<b>Abstract</b>
Published on: 16 Dec 2023	<p>Curcumin Extract in curcumat capsules has antioxidant, anti-inflammatory, antiviral and antifungal actions. Curcumin exerts anti-inflammatory activity by inhibition of a number of different molecules that play an important role in inflammation. Curcumin is effective in reducing post-surgical inflammation. Curcumin helps to prevent atherosclerosis by reducing the formation of blood clumps. Curcumin inhibits the growth of Helicobacter pylori, which causes gastric ulcers and has been linked with gastric cancers. Curcumin can bind with heavy metals such as cadmium and lead, thereby reducing the toxicity of these heavy metals. This property of curcumin explains its protective action to the brain. Curcumin acts as an inhibitor for cyclooxygenase, 5-lipoxygenase and glutathione S-transferase. It is a common spice, known mostly for its use in Indian dishes as a common ingredient in curries and other ethnic meals. Turmeric has also been used for centuries in Ayurvedic medicine, which integrates the medicinal properties of herbs with food. This extraordinary herb has found its way into the spotlight in the west because of its wide range of medicinal benefits. This article reviews the current available scientific literature regarding the effect of Curcumat capsules as an effective supplementation for various life style disorders &amp; as an effective potent Antioxidant.</p>
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<b>Keywords:</b> curcumin, turmeric, antioxidant, anti-inflammatory	

### INTRODUCTION

Curcumin, its main active constituent in curcumat capsules, is as powerful and antioxidant as vitamins C, E and Beta-Carotene, making turmeric usage a consumer choice for cancer prevention, liver protection and premature aging. Several published studies also show that turmeric inhibits the growth of several different types of cancer cells. In addition, turmeric is a powerful anti-inflammatory, easing conditions such as bursitis, arthritis and back pain. Curcumat capsules anti-inflammatory action is likely due to a combination of three different

properties. First, curcumin capsules lower the production of inflammation-inducing histamine. Secondly, it increases and prolongs the action of the body's natural anti-inflammatory adrenal hormone, cortisol, and finally, curcumin capsules improve circulation, thereby flushing toxins out of small joints where cellular wastes and inflammatory compounds are frequently trapped. Research has also confirmed the digestive benefits of curcumin capsules. Curcumin capsules act as a cholagogue, stimulating bile production, thus, increasing the body's ability to digest fats, improving digestion and eliminating toxins from the liver.

### COMPOSITION OF CURCUMIN CAPSULES

The active constituents of Curcumin capsules are the flavonoid curcumin (diferuloylmethane) and various volatile oils, including turmerone, atlantone, and zingiberone. Other constituents include sugars, proteins, and resins. The best-researched active constituent is curcumin, which comprises 95 percent of Curcuminoids.

<b>Supplement Facts</b>	
Serving Size : 1 Veg Capsule	Servings per container : 60
Each Hydroxypropyl Methyl Cellulose Capsule Contains :	
Curcumin Extract (Curcuminoids 95%)	500mg
Piperine	5mg

- ▶ Curcumin in Curcumin is blended with Piperine for enhancing absorption and blood retention time. It can work more effectively and for a longer time than plain curcumin extracts or unstandardized turmeric.

### MECHANISMS OF ACTION

#### Antioxidant Effects

Water- and fat-soluble extracts of turmeric and its curcumin component exhibit strong antioxidant activity, comparable to vitamins C3 *Curcuma longa* and curcumin: a review article 67 and E. A study of ischemia in the feline heart demonstrated that curcumin pretreatment decreased ischemia-induced changes in the heart. An *in vitro* study measuring the effect of curcumin on endothelial heme oxygenase-1, an inducible stress protein, was conducted utilizing bovine aortic endothelial cells. Incubation (18 hours) with curcumin resulted in enhanced cellular resistance to oxidative damage.

#### Hepatoprotective Effects

Turmeric has been found to have a hepatoprotective characteristic similar to silymarin. Animal studies have demonstrated turmeric's hepatoprotective effects from a variety of hepatotoxic insults, including carbon tetrachloride (CCl<sub>4</sub>), galactosamine, acetaminophen (paracetamol), and *Aspergillus* aflatoxin. Turmeric's hepatoprotective effect is mainly a result of its antioxidant properties, as well as its ability to decrease the formation of pro-inflammatory cytokines. In rats with CCl<sub>4</sub>-induced acute and subacute liver injury, curcumin administration significantly decreased liver injury in test animals compared to controls. Turmeric extract inhibited fungal aflatoxin production by 90 percent when given to ducklings infected with *Aspergillus* parasiticus. Turmeric and curcumin also reversed biliary hyperplasia, fatty changes and necrosis induced by aflatoxin production. Sodium curcumin, a salt of curcumin, also exerts choleric effects by increasing biliary excretion of bile salts, cholesterol, and bilirubin, as well as increasing bile solubility, therefore possibly preventing and treating cholelithiasis.

#### Anti-inflammatory Effects

The volatile oils and curcumin of *Curcuma longa* exhibit potent anti-inflammatory effects. Oral administration of curcumin in instances of acute inflammation was found to be as effective as cortisone or phenylbutazone, and one-half as effective in cases of chronic inflammation. In rats with Freund's adjuvant-induced arthritis, oral administration of *Curcuma longa* significantly reduced inflammatory swelling compared to controls. In monkeys, curcumin inhibited neutrophil aggregation associated with inflammation. *C. longa*'s anti-inflammatory properties may be attributed to its ability to inhibit both biosynthesis of inflammatory prostaglandins

from arachidonic acid, and neutrophil function during inflammatory states. Curcumin may also counteract inflammation and irritation associated with inflammatory skin conditions and allergies.

#### Anticarcinogenic Effects

Animal studies involving rats and mice, as well as *in vitro* studies utilizing human cell lines, have demonstrated curcumin's ability to inhibit carcinogenesis at three stages: tumor promotion, angiogenesis, and tumor growth. In two studies of colon and prostate cancer, curcumin inhibited cell proliferation and tumor growth. Turmeric and curcumin are also capable of suppressing the activity of several common mutagens and carcinogens in a variety of cell types in both *in vitro* and *in vivo* studies. The anticarcinogenic effects of turmeric and curcumin are due to direct antioxidant and free-radical scavenging effects, as well as their ability to indirectly increase glutathione levels, thereby aiding in hepatic detoxification of mutagens and carcinogens, and inhibiting nitrosamine formation.

#### Antimicrobial Effects

Turmeric extract and the essential oil of *Curcuma longa* inhibit the growth of a variety of bacteria, parasites, and pathogenic fungi. A study of chicks infected with the caecal parasite *Eimeria maxima* demonstrated that diets supplemented with 1-percent turmeric resulted in a reduction in small intestinal lesion scores and improved weight gain. Another animal study, in which guinea pigs were infected with either dermatophytes, pathogenic molds, or yeast, found that topically applied turmeric oil inhibited dermatophytes and pathogenic fungi, but neither curcumin nor turmeric oil affected the yeast isolates. Improvements in lesions were observed in the dermatophyte- and fungi-infected guinea pigs, and at seven days post-turmeric application the lesions disappeared. Curcumin has also been found to have moderate activity against *Plasmodium falciparum* and *Leishmania* major organisms.

#### Cardiovascular Effects

Turmeric's protective effects on the cardiovascular system include lowering cholesterol and triglyceride levels, decreasing susceptibility of low density lipoprotein (LDL) to lipid peroxidation, and inhibiting platelet aggregation. These effects have been noted even with low doses of turmeric. A study of 18 atherosclerotic rabbits given low-dose (1.6–3.2 mg/kg bodyweight daily) turmeric extract demonstrated decreased susceptibility of LDL to lipid peroxidation, in addition to lower plasma cholesterol and triglyceride levels. The higher dose did not decrease lipid peroxidation of LDL, but cholesterol and triglyceride level decreases were noted, although to a lesser degree than with the lower dose. Turmeric extract's effect on cholesterol levels may be due to decreased cholesterol uptake in the intestines and increased conversion of cholesterol to bile acids in the liver. Inhibition of platelet aggregation by *C. longa* constituents is thought to be *via* potentiation of prostacyclin synthesis and inhibition of thromboxane synthesis.

#### Gastrointestinal Effects

Constituents of *Curcuma longa* exert several protective effects on the gastrointestinal tract. Sodium curcumin inhibited intestinal spasm and p-tolymethylcarbinol, a turmeric component, increased gastrin, secretin, bicarbonate, and pancreatic enzyme secretion. Turmeric has also been shown to inhibit ulcer formation caused by stress, alcohol, indomethacin, pyloric ligation, and reserpine, significantly increasing gastric wall mucus in rats subjected to these gastrointestinal insults.

#### Curcumin enhances immunity

Curcumin can also help the body fight off cancer should some cells escape apoptosis. When researchers looked at the lining of the intestine after ingestion of curcumin, they found that CD4+ T-helper and B type immune cells were greater in number. In addition to this localized immune stimulation, curcumin also enhances immunity in general. Researchers in India have documented increased antibodies and more immune action in mice given curcumin. Curcumin blocks NF- $\kappa$ B and the mitogenic response in *Helicobacter pylori*-infected epithelial cells. Studies indicate that infection of epithelial cells by the microbial pathogen *Helicobacter pylori* leads to activation of the transcription factor nuclear factor  $\kappa$ B (NF- $\kappa$ B), the induction of pro-inflammatory cytokine/chemokine genes, and the mitogenic response (cell scattering). It has been investigated that *H. pylori*-induced NF- $\kappa$ B activation and the subsequent release of interleukin 8 (IL-8) are inhibited by curcumin (diferuloylmethane), a yellow pigment in turmeric (*Curcuma longa* L.). It has been demonstrated that curcumin inhibits I $\kappa$ B degradation, the activity of I $\kappa$ B kinases  $\alpha$  and  $\beta$  (IKK $\alpha$  and  $\beta$ ), and NF- $\kappa$ B DNA-binding. The mitogen-activated protein kinases (MAPK), extracellular signal-regulated kinases 1/2 (ERK1/2) and p38, which are also activated by *H. pylori* infection, are not inhibited by curcumin. It is studied that *H. pylori*-induced mitogenic response is blocked by curcumin. It has been concluded that curcumin, due to inhibition of NF- $\kappa$ B activation and cell scattering, should be considered as a potential therapeutic agent effective against pathogenic processes initiated by *H. pylori* infection.

**Pharmacokinetics**

Pharmacokinetic studies in animals have demonstrated that 40-85 percent of an oral dose of curcumin passes through the gastrointestinal tract unchanged, with most of the absorbed flavonoid being metabolized in the intestinal mucosa and liver. Due to its low rate of absorption, curcumin is often formulated with bromelain for increased absorption and enhanced anti-inflammatory effect.

**Supplement Facts**

**Presentation:** CAPSULES

**Usage**

**Nutritional application of Curcumin**

- ▶ Due to its ability to cross Blood Brain Barrier, it acts as a Neuroprotective agents, helps to reduce parkinson's disease, depression, anxiety and amyloid plaques in Alzheimer's disease.
- ▶ Curcumin helps to maintain healthy cholesterol levels by reducing low-density cholesterol (LDL) and triglyceride levels.  
*Yi-Sun Yang, et al., Phytoth Res, Vol 28:12, p. 1770–1777, (2014)*
- ▶ Helps to reverse insulin resistance in the early stages of diabetes and support the action of some antidiabetic prescription drugs.
- ▶ Help to maintain a healthy cardiovascular system by improving the viscosity of blood and reducing plaque formation in the arteries.

**Contra-indications:** ThisProduct is contra-indicated in persons with Known hypersensitivity to anycomponent of the product hypersensitivity to any component of the product.

**Recommended usage :** *Adults:* .1-2 capsules twice a day with water or liquid of choice twice daily  
“Do not exceed the recommended daily dose”

**Administration:** Taken by oral route at anytime with food.

**Precautions:** Food Supplements must not be used as a substitute for a varied and balanced diet and a healthy lifestyle. Do not exceed the recommended daily dose.

**Warnings:** If you are taking any prescribed medication or has any medical conditions always consults doctor or healthcarepractitioner before taking this supplement.

**Side Effects:** VeryMild side effects like nausea, headache and vomiting in some individuals may be observed.

**Storage:** Store in a cool, dry and dark place.

## CLINICAL STUDIES

- ▶ **500mg curcumin daily has been demonstrated to reduce total cholesterol levels by 17% while a higher dose of 6,000mg reduces total cholesterol by 5% in otherwise healthy subjects.**

Pungcharoenkul K, Thongnopnua P Effect of different curcuminoid supplement dosages on total in vivo antioxidant capacity and cholesterol levels of healthy human subjects.

- ▶ **Curcumin exerts this apparent kidney protection via suppressing inflammation and related cytokines or mRNA associated with inflammation (MCP-1, IL-8, NF-kB)**

Zhong F, et al. Curcumin attenuates lipopolysaccharide-induced renal inflammation . Biol Pharm Bull. (2011)

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