

Curcumin

TECHNICAL SUMMARY

Curcumin is the principle bioactive constituent present in the roots of Turmeric (*Curcuma longa*), a plant belonging to the ginger family. Turmeric has a long history of use in traditional Ayurvedic herbalism, and it has been extensively researched by modern scientists. This product is standardized to 95% Curcuminoids, including Curcumin, Demethoxycurcumin and Bisdemethoxycurcumin.

Structure Formula:

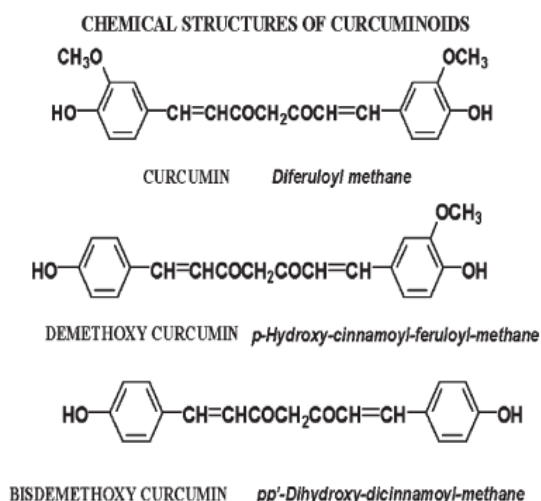


Fig. 1. Chemical structure of curcuminoids curcumin, demethoxy curcumin and bisdemethoxy curcumin that have shown antioxidant and/or anti-inflammatory properties.

Chemical Name: Curcumin: diferuloyl methane [1,7-bis (4-hydroxy-3-methoxyphenol)-1,6-heptadiene-3,5-dione] (Figure 1)

Allergen and Additive Disclosure: Not manufactured with yeast, wheat, gluten, soy, milk, egg, fish, shellfish or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

Delivery Form: Vegetable capsule

ROLE AS NUTRIENT/FUNCTION

Curcumin is found in rhizomes of turmeric (*Curcuma longa*). It is widely used as a spice, food coloring, yellow dye, and has been used by traditional herbalists for centuries. Curcumin has been extensively researched by modern scientists and is involved in a wide array of biological processes. At a cellular level, in experimental settings, it directly modulates the activity of major enzymes involved in immune system responses to normal biological stress.* It is a potent free radical scavenger and it enhances the synthesis of glutathione.* Curcumin may also help to promote normal cell cycle regulation and help cells involved in neurological processes to function adequately.*.

Supplement Facts

Serving Size 1 Veg Capsule

Amount Per Serving

Turmeric Root Extract (<i>Curcuma longa</i>)	665 mg*
[Standardized to min. 95% Curcuminoids (630 mg) (including Curcumin, Demethoxycurcumin and Bisdemethoxycurcumin)]	

* Daily Value not established.

Other ingredients: Cellulose (capsule), Silica and Magnesium Stearate (vegetable source).

- **Standardized Extract**
- **95% Curcuminoids**

SUGGESTED USAGE: Take 1 capsule twice daily with food, or as directed by your healthcare practitioner.

NATUROKINETICS®

Liberation: Curcumin Veg Capsules pass standard disintegration test in water (< 60 minutes).

Absorption: Curcumin is minimally absorbed in the intestine.

Distribution: Curcumin has a high affinity to gastro-intestinal tissues. Once in the bloodstream, curcumin binds to serum albumin and is transported to target tissues (in descending order): intestine, spleen, liver, kidneys. Curcumin penetrates into the cytoplasm and is able to accumulate in membrane structures. Curcumin in its free, unconjugated form can also cross the blood-brain barrier.

Metabolism: The main metabolic pathway of curcumin biotransformation includes glucuronidation in the liver, resulting in the formation of three relatively stable glucuronate-curcumin derivatives that retain only some of the bioactivity of curcumin; a.) Dihydrocurcumin glucuronide, b.) Tetrahydrocurcumin glucuronide, and c.) Hexahydrocurcumin glucuronide.

Elimination: Unabsorbed curcumin is eliminated in feces. Absorbed curcumin is cleared from plasma within hours, and glucuronated in the liver. Curcumin metabolites are primarily eliminated in the bile.

SAFETY INFORMATION

Tolerability: Curcumin in food is typically well tolerated and it is estimated that a typical Indian diet provides 80-200 mg curcumin per day. In some consumers it can cause mild gastrointestinal discomfort such as nausea and diarrhea. Turmeric may cause gallbladder contractions. Use with caution in patients with gallstones or gallbladder disease.

Contraindications: None known.

INTERACTIONS

Drug Interactions: Curcumin may interact with aspirin, clopidogrel (Plavix®), dalteparin (Fragmin®), enoxaparin (Lovenox®), heparin, ticlopidine (Ticlid®), and warfarin (Coumadin®).

Supplement Interactions: Concomitant use of turmeric with herbs that might affect platelet function could theoretically increase the risk of bleeding in some people. These herbs include angelica, clove, danshen, garlic, ginger, ginkgo, *Panax ginseng*, red clover, willow, and others.

Interaction with Lab Tests:None known.

STORAGE

Store in cool, dry, environment in a tightly sealed container.