

Delta-Fraction Tocotrienols

from annatto beans



Item #55270 – 50 mg 75 softgels
Item #56180 – 125 mg 30 softgels

The Possible Benefits of Delta-Fraction Tocotrienols, a Dietary Supplement

- Supports healthy levels of blood lipids*
- Supports endothelial function, and the circulatory system overall*
- Provides antioxidant protection of fats and lipid membranes*
- Enhances blood level of coenzyme Q10*
- Potentially enhances healthy metabolism, including insulin sensitivity*

Description

Delta-Fraction Tocotrienols contains delta- and gamma-tocotrienols. Along with tocopherols, tocotrienols are part of the vitamin E family. They are important oil-soluble antioxidants, crucial to the protection of fats, oils, and cell membranes against free radical damage.* Free radicals are reactive oxygen compounds generated by our normal biological processes and by exposure to ultraviolet radiation, pollution, cigarette smoke and other environmental and biological stress factors. High levels of free radicals can break down cell membranes and damage cell DNA.

Tocotrienols have been shown to strengthen arterial walls, and to support blood flow through arteries (coronary, carotid, and peripheral).* Tocotrienols help prevent the oxidation of LDL cholesterol, and some studies suggest that tocotrienols may prevent cholesterol oxidation more effectively than tocopherols.* Unlike tocopherols, delta- and gamma-tocotrienols also support healthy levels of cholesterol, including total and LDL cholesterol.* Tocotrienols have an inhibitory effect on HMG-CoA reductase, the liver enzyme that is critical to the rate at which cholesterol is synthesized.

Tocotrienols may potentially support endothelial functions and overall cardiovascular health in other ways, including supporting healthy levels of thromboxane, adhesion molecules, and C-reactive protein

(CRP), and healthy platelet aggregation.* Tocotrienols do not lower plasma coenzyme Q10 as do the statin drugs, but instead increase it.*

Preliminary research suggests that delta-tocotrienol has potential to support healthy metabolism by enhancing insulin function, including insulin sensitivity.* Research also suggests that tocotrienols may offer some protection from the sun's ultraviolet radiation, working synergistically with tocopherols and helping preserve tocopherols in skin cells.*

A small structural difference between tocopherols and tocotrienols results in distinct functional differences in their antioxidant activities, probably due to differences in how each is incorporated into cellular membranes. Tocopherols, with a saturated side chain that interacts hydrophobically with acyl side chains of membrane phospholipids, are relatively less able to access lipid radicals due to steric hindrance. Tocotrienols, with an unsaturated farnesyl side chain, have increased accessibility to lipid radicals and resulting greater antioxidant capacity. Tocopherols also have a significantly longer tail, so they anchor deeply into lipid membranes, whereas tocotrienols anchor less deeply, allowing them to cross more easily from one membrane to the next. These factors may explain why tocotrienol is 40-60 times more powerful as an antioxidant than tocopherol.*

*THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT, CURE, OR PREVENT ANY DISEASE.

Tocotrienols occur in many of the same sources as tocopherols, such as oil from rice bran, palm fruit, barley, and wheat germ, and both tocopherols and tocotrienols occur in alpha, beta, gamma, and delta fractions. Palm and rice contain large amounts of tocopherols and only minor amounts of active delta-tocotrienol, so Delta-Fraction Tocotrienols utilizes tocotrienols extracted from annatto. Annatto produces a superior form of

tocotrienols, high in the most beneficial fractions, delta-tocotrienol and gamma-tocotrienol, and is free of tocopherols.

Tocotrienols are well tolerated, with an extensive history of study and safe use. Human consumption of 240 mg/day of tocotrienols for up to two years caused no adverse effects, and animal toxicity studies suggest that they are safe at much higher levels.*

Item #55270 – 50 mg

Serving Size: 2 Softgels

Servings Per Container: 37

Amount Per Serving:

Tocotrienols (as DeltaGOLD® Tocotrienols containing 90% Delta-Tocotrienol 100 mg
and 10% Gamma-Tocotrienol)

Other ingredients: Rice bran oil, gelatin, glycerin, water.

Suggested Use: As a dietary supplement, 1 or 2 softgels one or two times daily with meals, or as directed by a healthcare practitioner.

Item #56180 – 125 mg

Serving Size: 1 Softgel

Servings Per Container: 30

Amount Per Serving:

Tocotrienols (as DeltaGOLD® Tocotrienols containing 90% Delta-Tocotrienol 125 mg
and 10% Gamma-Tocotrienol)

Other ingredients: Rice bran oil, gelatin, glycerin, water.

Suggested Use: As a dietary supplement, 1 softgel daily with an evening meal, or as directed by a healthcare practitioner. Higher doses (2 or 3 softgels) may be taken in divided doses to support cellular health.*

References

- Tomeo A, et al. *Lipids*. 1995;30(12):1179-1183.
Qureshi A, et al. *Lipids*. 1995;30(12):1171-1177.
Nesaretnam K, et al. *Lipids*. Dec1995;30(12):1139-43.
Nesaretnam K, Dorasamy S, Darbre PD. *Int J Food Sci Nutr*. 2000;51(Suppl):S95-103.
Rahmat A, et al. *Nutrition*. May1993;9(3):229-32.
Edmonds SE, et al. *Ann Rheum Dis*. Nov1997;56(11):649-55.
Robertson JM, et al. *Ann NY Acad Sci*. 1989;570: 372-82.
Chylack LT Jr, Brown NP, et al. *Ophthalmic Epidemiol*. Feb2002;9(1):49-80.
Chan AC. *J Nutr*. Oct1998;128(10):1593-96.
Stephens NG, et al. *Lancet*. Mar1996;347(9004):781-86.
D'Odorico A, Bortolan S, Cardin R, D'Inca' R, Martines D, Ferronato A, et al. *Scand J Gastroenterol*. Dec 2001;36(12):1289-94.
Kuroki F, Iida M, Tominaga M, Matsumoto T, Kanamoto K, Fujishima M. *Dig Dis*. Jul 1994;12(4):248-54.
Das S. *Acta Oncol*. 1994;33(6):615-19.
Salonen JT, et al. *BMJ*. Oct1995;311(7013):1124-27.
Paolisso G, et al. *Am J Clin Nutr*. May1993;57(5):650-56.
Manzella D, Barbieri M, Ragno E, Paolisso G. *Am J Clin Nutr*. Jun2001;73(6):1052-7.
London RS, et al. *J Reprod Med*. Jun1987;32(6):400-04.
Palan PR, et al. *Nutr Cancer*. 1991;15(1):13-20.
Peyser CE, Folstein M, Chase GA, Starkstein S, Brandt J, Cockrell JR, et al. *Am J Psychiatry*. 1995;152:1771-1775.
Gould MN, Haag JD, Kennan WS, et al. *Am. J. Clin. Nutr*. 1991 53: 1068S.
Hata A, Koga S, Shigematsu H, Kato S, et al. *Geriat. Med*. 1981 19: 1813-1840.
Seetharamaiah GS, Chandrasekhara N. *Indian J Med Res*. 1990 Dec;92:471-5.
Seetharamaiah GS, Krishnakantha TP, Chandrasekhara N. *J Nutr Sci Vitaminol (Tokyo)*. 1990 Jun;36(3):291-7.



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