

Toco-E Max



Clinical Applications

- Offers Antioxidant Protection for Cell Membranes and Lipids*
- Supports Healthy Cytokine and Eicosanoid Balance*
- Supports Neuroprotection and Cognitive Health*
- Supports Cardiovascular, Nervous, and Reproductive Systems*
- Supports Liver Health*
- Provides Mixed Tocopherols and Tocotrienols for Comprehensive Vitamin E Nutrition*

Toco-E Max features EVNol™ full-spectrum palm tocopherol/tocotrienol complex. EVNol's patented bio-enhancing technology has been shown to increase tocotrienol absorption rates in humans by an average of 250%. Tocotrienols confer unique health benefits not provided by tocopherols. This means Toco-E Max not only enables superior absorption but also more comprehensive vitamin E benefits than tocopherol-only formulas.*

All Absolute Health Formulas Meet or Exceed cGMP Quality Standards

Discussion

Vitamin E, in its natural form, comprises eight different compounds: alpha-, beta-, gamma-, and delta-tocopherols and alpha-, beta-, gamma-, and delta-tocotrienols. Both tocopherols and tocotrienols are important to human health. Known as the "master antioxidant," vitamin E can attenuate oxidative stress, and its antioxidant-related effects on various organs and systems have been the focus of vast research. More recently, non-antioxidant mechanisms have been proposed, such as those that affect cell-signal transduction and gene expression.¹ Though most of the research has been on alpha-tocopherol, recent mechanistic studies indicate that other isomers of vitamin E, such as gamma- and delta-tocopherols and tocotrienols, have superior antioxidant and cell-signaling properties that offer greater health benefits.^{2,3}

Tocotrienols Studies have demonstrated that tocotrienols have superior antioxidant activity compared to tocopherols. Tocotrienols also exhibit biological activities related to neuroprotection, radioprotection, cell-life regulation, cytokine modulation, and lipid metabolism that are not shared by tocopherols³⁻⁵. Many of these benefits are thought to be mediated via their carboxychromanol metabolites^{2,6}. Among other actions, tocotrienols have been shown to inhibit HMG-CoA reductase (3-hydroxy-3-methylglutaryl-coenzyme A reductase), attenuate transcription factor NF-κB activation, and inhibit COX-2.^{7,8} Given these mechanisms, in addition to their antioxidant mechanisms, tocotrienols have a very broad range of applications. Due to the poor absorption and low bioavailability of tocotrienols, scientists developed Toco-E Max.

Bio-enhanced tocotrienol/tocopherol complex Toco-E Max is a natural, full-spectrum tocopherol and tocotrienol complex extracted and concentrated from the red palm fruits (*Elaeis guineensis*) of sustainable plantations in Peninsular Malaysia. This vitamin E complex also contains minute amounts of other phytonutrients such as plant squalene, phytosterols, coenzyme Q10, and mixed carotenoids that are naturally extracted together with tocotrienols. This patented formula contains a precise mixture of oil and approved food emulsifiers at optimum ratio and processing that self-emulsifies in the gastrointestinal tract to facilitate and provide a rapid and consistent absorption of tocotrienols into the plasma, independent of dietary fat or food intake.

Human Absorption Studies Kholsa et al were the first to establish that oral supplementation of Toco-E Max resulted in a peak plasma level 12- to 13-fold the level established for neuroprotection.⁹ Later, in a two-period, two-sequence, crossover study performed in healthy human volunteers, researchers demonstrated that the EVNol system increased the rate and extent of absorption of individual tocotrienols by an average of 250% compared to a regular tocotrienol oil extract.¹⁰ Moreover, Toco-E Max is the only tocotrienol/tocopherol complex in the market that has been the subject of an actual human tissue distribution study. In that study, Patel et al demonstrated that orally supplemented tocotrienols from Toco-E Max are absorbed into plasma and delivered and accumulated in vital organs, including the brain.¹¹

Human Clinical Studies Toco-E Max is a heavily researched tocopherol/tocotrienol product that has been scientifically substantiated with human clinical studies on brain health, liver support, beauty, and cardiovascular health.¹¹⁻¹⁸ For example, in a randomized, placebo-controlled, two-year neuroprotection study (n = 121), supplementation with 200 mg/d Toco-E Max attenuated the progression of injury to brain white matter.¹² Three other studies demonstrated the positive effects of Toco-E Max on parameters of liver health^{11,13,14}, and studies related to cardiovascular health suggested that 50-200 mg/d Toco-E Max supports healthy lipid (cholesterol, low-density lipoprotein, triglyceride) metabolism and showed a trend toward improved arterial compliance (the ability to expand and contract)¹⁵⁻¹⁶. Supplementation has also been shown to support the desired immune response to vaccine.¹⁷ And in a randomized, double-blind, placebo-controlled trial (n = 38), volunteers with hair loss who were given 100 mg of Toco-E Max daily experienced a 34.5% increase in number of hairs at the end of eight months, compared to a 0.1% increase in the placebo group.¹⁸ The higher activity of tocotrienols in certain organs may, in part, be explained by the fact that the unsaturated side-chain of tocotrienols allow more efficient penetration into tissues, such as brain and liver tissues, that have saturated fatty layers.^{3,13} It is clear from the emerging data that tocopherols and tocotrienols have complementary, unique, and important functions.³ Providing a formula that supplies the full spectrum of natural vitamin E isomers is an important option for practitioners and their patients.

Note on Vitamin E Activity and International Units (IUs) Only alpha-tocopherol contributes to IU of vitamin E activity: 1 mg d-alpha tocopherol equals 1.49 IU vitamin E activity. Other naturally occurring forms of vitamin E (beta-, gamma-, delta-tocopherol) and tocotrienols do not contribute toward meeting the vitamin E requirement. Hence, the IU is calculated based on alpha- tocopherol alone in all formulations. Other isomers of vitamin E are expressed as "mg." Each gram of Toco-E Max contains approximately 152 mg d-mixed tocotrienols and 35-60 mg d-alpha-tocopherol. Hence, the minimum vitamin E activity in 1 gram of EVNol SupraBio 20% = 35 mg d-alpha-tocopherol x 1.49 = 52.15 IU.

*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.

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Toco-E Max



Supplement Facts

Serving Size: 1 Softgel
Servings Per Container: 60

	Amount Per Serving	% Daily Value
Vitamin E (as d-alpha tocopherol)	33.5 mg	223%
EVNol SupraBio™ Bio-Enhanced Natural Full Spectrum Tocotrienol/Tocopherol Complex	164.5 mg	**
Total Mixed Tocotrienols	25 mg	**
d-Gamma Tocotrienol	11.5 mg	**
d-Alpha Tocotrienol	7.4 mg	**
d-Delta Tocotrienol	4.1 mg	**
d-Beta Tocotrienol	822.5 mcg	**
Total Mixed Tocopherols	125 mg	**
Typical Composition:		
d-Gamma Tocopherol	75 mg	**
d-Delta Tocopherol	30 mg	**
d-Alpha Tocopherol	17.5 mg	**
d-Beta Tocopherol	2.5 mg	**

**Daily Value not established.

Other Ingredients: Sunflower oil, softgel (bovine gelatin, vegetable glycerin, and purified water), and polyglycerol esters of fatty acids.



EVNol SupraBio™ is a trademark of ExcelVite Inc. and protected by US patent 6,596,306.

Directions

Take one softgel twice daily, or as directed by your healthcare provider.

Consult your healthcare provider prior to use. Individuals taking blood thinners or other medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged.

Does Not Contain

Wheat, gluten, corn, yeast, soy protein, dairy products, shellfish, peanuts, tree nuts, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.



References

1. Azzi A, Meydani SN, Meydani M, et al. The rise, the fall and the renaissance of vitamin E. *Arch Biochem Biophys*. 2016 Apr 1;595:100-08. [PMID: 27095224]
2. Jiang Q, Yin X, Lill MA, et al. Long-chain carboxychromanols, metabolites of vitamin E, are potent inhibitors of cyclooxygenases. *Proc Natl Acad Sci U S A*. 2008 Dec 23;105(51):20464-69. [PMID: 19074288]
3. Ahsan H, Ahad A, Iqbal J, et al. Pharmacological potential of tocotrienols: a review. *Nutr Metab (Lond)*. 2014 Nov 12;11(1):52. [PMID: 25435896]
4. Osakada F, Hashino A, Kume T, et al. Alpha-tocotrienol provides the most potent neuroprotection among vitamin E analogs on cultured striatal neurons. *Neuropharmacol*. 2004 Nov;47(6):904-15. [PMID: 15527824]
5. Fu JY, Che HL, Tan DM, et al. Bioavailability of tocotrienols: evidence in human studies. *Nutr Metab (Lond)*. 2014 Jan 13;11(1):5. [PMID: 24410975]
6. Jiang Q. Natural forms of vitamin E: metabolism, antioxidant, and anti-inflammatory activities and their role in disease prevention and therapy. *Free Radic Biol Med*. 2014 Jul;72:76-90. [PMID: 24704972]
7. Singh VK, Hauer-Jensen M. γ-tocotrienol as a promising countermeasure for acute radiation syndrome: current status. *Int J Mol Sci*. 2016 May 3;17(5). pii:E663. [PMID: 27153057]
8. Peh HY, Tan WS, Liao W, et al. Vitamin E therapy beyond cancer: tocopherol versus tocotrienol. *Pharmacol Ther*. 2016 Jun;162:152-69. [PMID: 26706242]
9. Khosla P, Patel V, Whinter JM, et al. Postprandial levels of the natural vitamin E tocotrienol in human circulation. *Antioxid Redox Signal*. 2006 May-Jun;8(5-6):1059-68. [PMID: 16771695]
10. *Tocotrienols – A Potent and Unique Form of Natural Vitamin E from Red Palm Oil/Palm Fruits*. 6th ed. Edison, NJ: ExcelVite Inc.;2016.
11. Patel V, Rink C, Gordillo GM, et al. Oral tocotrienols are transported to human tissues and delay the progression of the model for end-stage liver disease score in patients. *J Nutr*. 2012 Mar;142(3):513-19. [PMID: 22298568]
12. Gopalan Y, Shuaib IL, Magosso E, et al. Clinical investigation of the protective effects of palm vitamin E tocotrienols on brain white matter. *Stroke*. 2014 May;45(5):1422-8. [PMID: 24699052]
13. Magosso E, Ansari MA, Gopalan Y, et al. Tocotrienols for normalisation of hepatic echogenic response in nonalcoholic fatty liver: a randomised placebo- controlled clinical trial. *Nutr J*. 2013 Dec 27;12(1):166. [PMID: 24373555]
14. Thendiono J, Arguillas M. The effect of vitamin E (mixed tocotrienol) on the liver stiffness measurement measured by transient elastography (fibroscan) among NAFLD patients. Presented at: 23rd Conference Meeting of the Asian Pacific Association for the Study of Liver; June 6-10, 2013; Singapore. <http://www.excelvite.com/wp-content/uploads/2015/04/EFFECT1.pdf>. Accessed June 6, 2016.
15. Ajuluchukwu JN, Okubadejo NU, Mabayoje M, et al. Comparative study of the effect of tocotrienols and -tocopherol on fasting serum lipid profiles in patients with mild hypercholesterolaemia: a preliminary report. *Niger Postgrad Med J*. 2007 Mar;14(1):30-33. [PMID: 17356586]
16. Rasool AH, Rahman AR, Yuen KH, et al. Arterial compliance and vitamin E blood levels with a self emulsifying preparation of tocotrienol rich vitamin E. *Arch Pharm Res*. 2008 Sep;31(9):1212-17. [PMID: 18806966]
17. Mahalingam D, Radhakrishnan AK, Amom Z, et al. Effects of supplementation with tocotrienol-rich fraction on immune response to tetanus toxoid immunization in normal healthy volunteers. *Eur J Clin Nutr*. 2011 Jan;65(1):63-69. [PMID: 20859299]
18. Beoy LA, Woei WJ, Hay YK. Effects of tocotrienol supplementation on hair growth in human volunteers. *Trop Life Sci Res*. 2010 Dec;21(2):91-99. [PMID: 24575202]

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