

Advanced Co Q10



Clinical Applications

- Innovative, Soy-Free, Five-Lipid Blend for Enhanced Absorption*
- Support Natural Energy Generation and Mitochondrial Function*
- Support Plasma/Tissue CoQ10 Levels*
- Support Health/Functioning of the Cardiovascular System*
- Support Neuromuscular and Central Nervous System Health*

*Advanced Co Q10 is Vitality Natural Health Care's proprietary, micro-emulsified CoQ10 formulas that offer unparalleled absorption and bioavailability. These formulations have been shown in clinical trials to be over eight times more absorbable than powdered CoQ10 and more than twice as bioavailable as oil-based or so-called "nano"-dispersed formulas on the market. The proprietary multilipid carrier employed in Ultra CoQ10 and Advanced Co Q10 is unmatched for optimal utilization in the support of cardiovascular and energy-based health needs.**

All Vitality Natural Health Care Formulas Meet or Exceed cGMP Quality Standards

Vitality Natural Health Care
2165 E Warner Rd Suite 104
Tempe, AZ 85284 | 602-388-1155

Discussion

Coenzyme Q10 (CoQ10) is a fat-soluble substance that plays a major role in energy production and antioxidant protection in the body. It is found in the body primarily in its interchangeable ubiquinone and ubiquinol forms. In general, CoQ10 supports mitochondrial energy production, antioxidant activity, cell membrane stabilization, gene expression and apoptosis, and neurological and cardiovascular health.^[1,2] Levels of CoQ10 in the body can be affected by a number of factors. Dietary contribution of CoQ10 is minimal and serum levels tend to decline with age or can be reduced due to drug-induced nutrient depletion.^{*[3-5]}

Synthesis of CoQ10 in the body is regulated by the enzyme HMG-CoA reductase. A variety of factors can inhibit HMG-CoA reductase and hinder CoQ10 production and availability, resulting in a potential increase in oxidative stress and a decrease in energy generation. In the event of reduced production, or drug-induced nutrient depletion, physicians recommend supplementation with CoQ10 to help maintain normal levels in the body.^[6,7] Supplementation with CoQ10 has been found to promote favorable outcomes for a targeted group of patients^[8] and to improve quality of life, energy levels, neurological health maintenance, exercise tolerance, and muscle comfort for a wide range of individuals.^[1,9] A research study utilizing functional intracellular assay (FIA) suggested that CoQ10 may be a potential peripheral biomarker of antioxidant status in neurological health maintenance.^{*[10]}

Cardiovascular health is particularly dependent upon CoQ10 because of the heart muscle's exceedingly high energy demand.^[9] The value of CoQ10 supplementation on cardiovascular health has been confirmed by ongoing human research studies.^[6,11-13] A randomized, double-blind, placebo-controlled study utilizing the same bioidentical, naturally yeast-fermented CoQ10 found in Advanced Co Q10 formulas was conducted in a select group of 49 patients. Researchers observed that supplementation with 100 mg/d of CoQ10 successfully restored plasma levels and significantly increased total CoQ10 levels by 127%.^{*[14]}

Results from the highly anticipated Q-SYMBIO research study were reported in May 2013. Prior to the Q-SYMBIO study, researchers had observed that myocardial CoQ10 levels were inversely related to heart health and function.^[15] The Q-SYMBIO results, in fact, supported this association. In the randomized, double-blind, placebo controlled Q-SYMBIO study, 420 patients were assigned to parallel groups to receive either the CoQ10 found in Advanced Co Q10 (100 mg three times per day) or placebo. Within three months, researchers observed a reduction in N-terminal pro-brain natriuretic peptide (NT-proBNP), an important marker of heart health, in the CoQ10 supplemented patients. After two years, patients who were supplemented with CoQ10 had significant cardiovascular improvement overall compared to placebo.^{*[16,17]}

Advanced Co Q10 contain a unique, micro-emulsified, highly bioavailable form of ubiquinone and represent a new generation of CoQ10 supplementation. This soy-free formulation contains five lipids that help dissolve CoQ10 crystals into single molecules. This process helps stabilize the formula to prevent re-crystallization and facilitates passive diffusion to enhance absorption. Earlier generation supplements were poorly absorbed

(0.6-1.0%), pure crystalline (powdered) forms of CoQ10, which served as the industry standard from the mid-1970s to the mid-1990s. A variety of forms and delivery systems offered somewhat improved absorption (2.3-5%) after 1995; however, these forms were unstable and crystallized and therefore difficult for the body to absorb. The five-lipid carrier, micro-emulsified CoQ10 in Vitality Natural Health Care's Advanced Co Q10 represents innovation and improvement in CoQ10 delivery and bioavailability.*

Relative CoQ10 Absorption^[15]

Figure 1. Plasma CoQ10 Cmax (ug/ml)

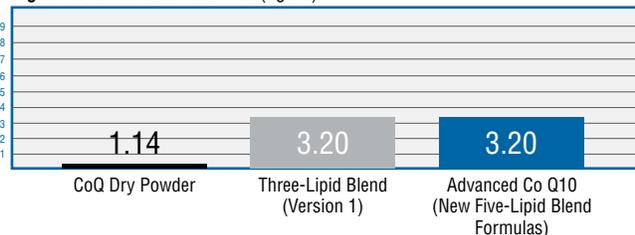


Figure 2. Cmax % Dose Absorbed

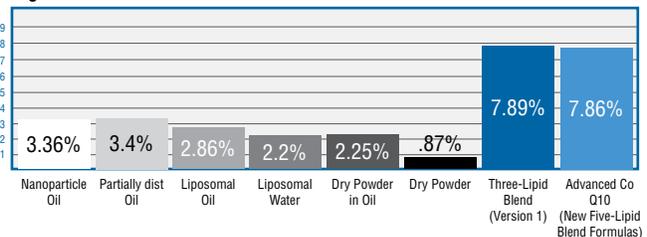
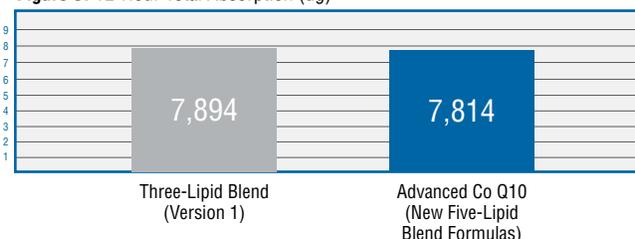


Figure 3. 12-Hour Total Absorption (ug)



***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.**

Advanced Co Q10



Supplement Facts

Serving Size: 1 Softgel
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Calories	15	
Calories from Fat	15	
Total Fat	1.5 g	2%†
Coenzyme Q10 (as ubiquinone)(Kaneka Q10®)	100 mg	**

†Percent Daily Values are based on a 2,000 calorie diet.
** Daily Value not established.

Other Ingredients: Proprietary blend of palmitic acid, oleic acid, and linoleic acid, safflower oil (non-GMO), medium-chain triglycerides, gelatin, vegetable glycerin, and annatto.

Kaneka Q10® is a registered trademark of Kaneka Corp.

Directions

Take one softgel one to two times daily, or as directed by your healthcare practitioner. Optimal results may be achieved by consuming with meals that contain fat.

Consult your healthcare practitioner prior to use. Individuals taking 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, dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners, or artificial preservatives.

References

- Morris G, Anderson G, Berk M, et al. Coenzyme Q10 Depletion in Medical and Neuropsychiatric Disorders: Potential Repercussions and Therapeutic Implications. *Mol Neurobiol.* 2013 Jun 13. [Epub ahead of print] [PMID: 23761046]
- Higdon J. CoQ10. Linus Pauling Institute. <http://lpi.oregonstate.edu/infocenter/othernuts/coq10/>. February 2003. Updated March 2012. Accessed July 25, 2013.
- Pelton R, LaValle JB, Hawkins EB, et al. *Drug-Induced Nutrient Depletion Handbook*. 2nd ed. Hudson, OH: LexiComp, Inc.; 2001.
- Berthold HK, Naini A, Di Mauro S, et al. Effect of ezetimibe and/or simvastatin on coenzyme Q10 levels in plasma: a randomised trial. *Drug Saf.* 2006;29(8):703-12. [PMID: 16872244]
- Rundek T, Naini A, Sacco R, et al. Atorvastatin decreases the coenzyme Q10 level in the blood of patients at risk for cardiovascular disease and stroke. *Arch Neurol.* 2004 Jun;61(6):889-92. [PMID: 15210526]
- Langsjoen PH, Langsjoen AM. The clinical use of HMG CoA-reductase inhibitors and the associated depletion of coenzyme Q10. A review of animal and human publications. *Biofactors.* 2003;18(1-4):101-11. Review. [PMID: 14695925]
- Crane FL. Biochemical functions of coenzyme Q10. *J Am Coll Nutr.* 2001 Dec;20(6):591-8. Review. [PMID: 11771674]
- Potgieter M, Pretorius E, Pepper MS. Primary and secondary coenzyme Q10 deficiency: the role of therapeutic supplementation. *Nutr Rev.* 2013 Mar;71(3):180-8. [PMID: 23452285]
- Zlatohlavek L, Vrablik M, Grauova B, et al. The effect of coenzyme Q10 in statin myopathy. *Neuro Endocrinol Lett.* 2012;33 Suppl 2:98-101. [PMID: 23183519]
- Mischley LK, Allen J, Bradley R. Coenzyme Q10 deficiency in patients with Parkinson's disease. *J Neurol Sci.* 2012 Jul 15;318(1-2):72-5. [PMID: 22542608]
- Littarru GP, Tian L. Clinical aspects of coenzyme Q10: an update. *Curr Opin Clin Nutr Metab Care.* 2005 Nov;8(6):641-6. Review. [PMID: 16205466]
- Munkholm H, Hansen HH, Rasmussen K. Coenzyme Q10 treatment in serious heart failure. *Biofactors.* 1999;9(2-4):285-9. [PMID: 10416042]
- Fotino AD, Thompson-Paul AM, Bazzano LA. Effect of coenzyme Q10 supplementation on heart failure: a meta-analysis. *Am J Clin Nutr.* 2013 Feb;97(2):268-75. [PMID: 23221577]
- Mabuchi H, Nohara A, Kobayashi J, et al. Effects of CoQ10 supplementation on plasma lipoprotein lipid, CoQ10 and liver and muscle enzyme levels in hypercholesterolemic patients treated with atorvastatin: a randomized double-blind study. *Atherosclerosis.* 2007 Dec;195(2):e182-89. [PMID: 17681347]
- Folkers K, Vadhanavikit S, Mortensen SA. Biochemical rationale and myocardial tissue data on the effective therapy of cardiomyopathy with coenzyme Q10. *Proc Natl Acad Sci U S A.* 1985 Feb;82(3):901-4. [PMID: 3856239]
- Mortensen SA, Kumar A, Dolliner P, et al. The effect of Coenzyme Q10 on morbidity and mortality in chronic heart failure. Results from the Q-SYMBIO study. [ESCARTIO abstract 440]. *European Journal of Heart Failure.* 2013 15(S1):S20. <http://spo.escardio.org/SessionDetails.aspx?eevid=61&fp=440&doc=abstract#.UfQgDI2TjSg>. Accessed July 25, 2013.
- European Society of Cardiology. Important new data shows CoQ10 improves survival in heart failure patients. <http://www.escardio.org/congresses/hf2013/congress-to-you/Pages/new-data-CoQ10-improves-survival-heart-failure-patients.aspx>. Accessed July 28, 2013.

***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.**