

## Citrus-Q10™ 60 Coenzyme Q10 for Cardiovascular Support †

### DESCRIPTION

Citrus-Q10™ 60, provided by Douglas Laboratories®, supplies naturally fermented coenzyme Q10 in a great tasting, natural citrus flavored chewable tablet. Citrus-Q10™ 60 contains no sugar, artificial colors or flavors and is suitable for vegetarians.

### FUNCTIONS

Coenzyme Q10 is an important rate-limiting nutrient that is a cofactor in the mitochondrial electron transport chain, the biochemical pathway in cellular respiration from which adenosine triphosphate (ATP) and metabolic energy is derived. Since nearly all cellular activities are dependent upon energy, coenzyme Q10 is essential for the health of all human tissues and organs, especially the heart. † Given the strength of the science that has been emerging for the use of supplemental CoQ10, it is important to ensure that optimal CoQ10 levels are achieved in the blood following supplementation. Biochemically, it functions much like vitamin E in that it participates in certain antioxidant and free radical reactions.

Numerous studies indicate coenzyme Q10 also plays an important role in the maintenance of the entire cardiovascular system. † Coenzyme Q10 is also important for the maintenance of blood vessels and heart muscle function. † In addition, statin drugs have been shown to impact coenzyme Q10 levels, therefore, individuals taking statin drugs may benefit from additional CoQ10 supplementation. And, as recent data indicate, it supports mitochondrial membrane proteins and protects DNA from oxidative stress. † Coenzyme Q10 is a large lipophilic nutrient that is best absorbed when a source of dietary fat is present such as lecithin.

As a lipid-soluble nutrient with antioxidant properties, coenzyme Q10 efficiently supports membrane phospholipids and serum low-density lipoproteins from lipid peroxidation. And, as recent data indicate, it supports mitochondrial membrane proteins and DNA from free radical induced oxidative damage. † Coenzyme Q10 has also been shown to extend the life of the potent antioxidant, vitamin E. †

Healthy people have the ability to synthesize adequate amounts of coenzyme Q10. According to Dr. Karl Folkers and other researchers, humans can synthesize coenzyme Q10 from the amino acids tyrosine or phenylalanine and mevalonic acid, all of which are abundant in the body. However, the synthesis is a complex process involving 15 separate steps which require many enzymes, nutritional mineral cofactors, and vitamin coenzymes.

As a result, the biosynthesis of coenzyme Q10 in the human body requires a good diet – one that is high in vitamins, minerals, and other nutrient factors. Yet, it has been shown by NHANES I and II studies that many Americans do not consume an adequate diet. Rather, for many, dietary intake of water soluble vitamins, vitamin A, and some minerals and trace elements is insufficient. Many of these nutrients are essential for the biosynthesis of coenzyme Q10. Thus, it is not surprising that the nutritional status of coenzyme Q10 tends to decline during the normal aging process. Coenzyme Q10 has been established as an essential nutrient for the health of every cell in the human body. †

### INDICATIONS

Citrus-Q10 60 may be a useful dietary adjunct for individuals whose coenzyme Q10 requirements are not met through biosynthesis of the molecule.

### FORMULA (#200052)

Each Tablet Contains:

Natural Coenzyme Q10 ..... 60 mg

Other ingredients: Mannitol, cellulose, povidone, citric acid,  
natural lemon/lime flavor, silica, natural orange flavor and sorbitol.

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### SUGGESTED USE

Adults take 1-4 tablets daily or as directed by your healthcare professional. Allow tablet to dissolve in mouth and swallow. Not a sublingual tablet.

### SIDE EFFECTS

No adverse side effects have been reported.

### STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

### REFERENCES

Langsjoen PH, Langsjoen JO, Langsjoen AM, Lucas LA. *Biofactors*. 2005;25(1-4):147-52. [Coenzyme Q10 and statins].

Sander S, Coleman CI, Patel AA, Kluger J, White CM. *J Card Fail*. 2006 Aug;12(6):464-72. [Coenzyme Q10].

Cooke M, Et al. *J Int Soc Sports Nutr*. 2008 Mar 4; 5:8. [Coenzyme Q10].

Folkers K, Simonsen R. *Biochim Biophys Acta* 1995;1271:281-6. [Coenzyme Q10].

Nicolson GL, Conklin KA. *Clin Exp Metastasis*. 2008; 25 (2): 161-9. Epub 2007 Dec 5.

Tiano L, et al. *Eur Heart J*. 2007 Sep; 28 (18): 2249-55. Epub 2007 Jul 19. [Coenzyme Q10].

Tran UC, Clarke CF. *Mitochondrion*. 2007 Jun; & Suppl: S62-71. Epub 2007 Mar 30. [Coenzyme Q10].

Xian-Liu Z, Artmann, C. *Altern Ther Health Med* 2009 Mar-Apr; 15(2):42-46. [Coenzyme Q10].

Hamilton SJ, Chew GT, Watts GF. *Diabetes Care*. 2009 May;32(5):810-2. doi: 10.2337/dc08-1736. [Coenzyme Q10].

Cordero M, et al. *Plos One* [serial online]. 2012;7(4):e35677.

Alleva R, et al. *Proc Natl Acad Sci USA* 1995;92:9388-9391.

Beyer RE. *J Bioenerg Biomembr* 1994;26:349-358.

Kontush A, et al. *Biochim Biophys Acta Lipids Lipid Metab* 1995;1258:177-187.

Stoyanovsky DA, Osipov AN, Quinn PJ, Kagan VE. *Arch Biochem Biophys* 1995;323:343-351.

**For more information on Citrus-Q10™ 60 visit [douglaslabs.com](http://douglaslabs.com)**

† 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.