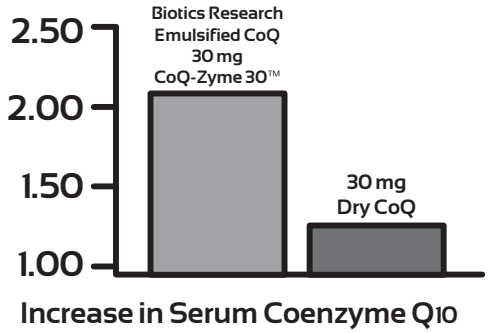
CoQ-Zyme 30™ & CoQ-Zyme 100 Plus™

CoQ-Zyme 100 Plus™ available in a 60 count bottle (#2617)

CoQ-Zyme 30 Plus™ available in a 60 count bottle (#2616)

CoQ-Zyme 30™ and **CoQ-Zyme 100 Plus™** each supply a highly bioavailable dose of ubiquinone coenzyme Q10 (CoQ10) due to the proprietary emulsification process used for delivery. In a double-blind clinical study, daily ingestion of 1 tablet (30 mg) of Biotics Research Corporation's emulsified CoQ10 for 4 weeks was shown to increase plasma CoQ10 levels by 210%, equivalent to 90-100 mg of dry CoQ10. Furthermore, dry CoQ10 powder increased serum levels in only 57% of subjects, while the Biotics Research emulsified CoQ10 produced an increase in serum CoQ10 levels in 80% of the subjects.[1,2]

Importantly, Biotics Research uses no soy byproducts, no artificial flavors or colorants, no propylene glycol, and no detergents or other artificial surfactants in our proprietary emulsification process.



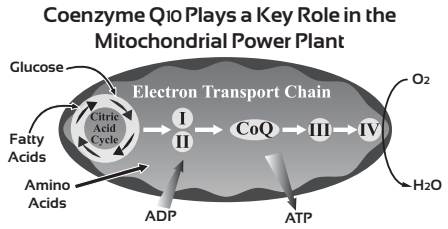
CoQ10 is a fat-soluble, high molecular weight compound produced by the body for the basic functioning of cells. As a cellular component, CoQ10 has two primary functions in the body; first, to act in the transfer of electrons as a necessary part of ATP production, and second, to function as an essential antioxidant. In the body, CoQ10 is ubiquitous in all cells (thus its name "ubiquinone"); however, in humans, the highest concentrations are found in the heart, liver, muscle, kidney and brain.

BIOTICS® RESEARCH CORPORATION

(905)476-3554
Biotics Research Canada
Box 283 • Keswick ON L4P 3E2
orders@bioticscan.com

Nutritional Support for Energy Production

A necessary component of ATP production, CoQ10 plays a critical role in mitochondrial respiration. In addition to intra-mitochondrial processes, it plays a vital role in extra-mitochondrial processes, including its regulatory action in the NADH oxidoreductase (complex I) function of the plasma membrane [3,4] as well as its function in the redox potential of both the Golgi complex and the plasma membrane.[5,6] Consequently, its role is vital to the cellular energy generating systems.[7] Often termed "the hub around which life processes revolve in the human body", CoQ10 participates in all energy processes. As the only lipid-soluble antioxidant synthesized endogenously,[8] its absence or inadequate supply results in diminished energy production and suboptimal cellular function.



CoQ10 and Cardiac Health

Over eighty drugs, the most notable being statin drugs, are known to have a negative impact on the body's ability to produce CoQ10.[9] Statins block the enzyme HMG-CoA reductase, which is a functional component in the body's ability to synthesize CoQ10. With statin therapy, reductions in CoQ10 between 16-54% have been documented.[10] As a result, there is often a need to increase the daily intake of CoQ10.

CoQ10 supplementation has demonstrated numerous cardiovascular benefits via its action to increase both myocardial and cardiac mitochondrial competence, as well as 'myocardial tolerance' towards the stress of hypoxia/reoxygenation.[11] Because the cells of the heart have a high dependence on ATP, they contain a large quantity of mitochondria, which support both the contractile role and the cardiac output.[12] Therefore, a depleted supply of CoQ10 may result in a negative impact on mitochondrial energy,[13] and supplemental CoQ10, therefore, exerts a positive influence on the performance of the heart.[14] In addition, CoQ10 is also speculated to improve the integrity of the vascular tissue indirectly via its inhibition of oxidative damage to LDL.[15]

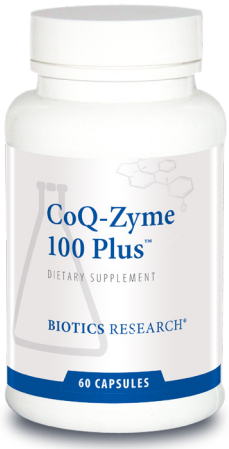
CoQ10 as an Antioxidant

Exogenous CoQ10 has been shown to protect cells against oxidative stress,[16] as well as to improve arterial endothelial function of the peripheral circulation in patients with Type II diabetes and dyslipidemia.[17] The body readily converts CoQ10 (ubiquinone) to the reduced form, ubiquinol, which predominates when there is a net generation of ATP in the cell. In addition to improving oxidation via its production of high energy phosphates, and as a consequence to its free radical scavenging activities,[18] CoQ10 functions as a potent intracellular antioxidant, and possesses powerful activity against free radical species.[19] Numerous studies have demonstrated the antioxidant benefits of CoQ10 supplementation, including its role in reducing the level of mitochondrial reactive oxygen species and decreasing DNA damage.[20]

CoQ10 and Immune Function

Because cells and tissues involved in immune function are highly dependent upon energy, they require an adequate supply of CoQ10. In studies with elderly animals, immune function is shown to decline with age. In these studies, a suppression of the immune response was associated with a marked decline in CoQ10 levels in thymic tissue.[21] Studies have also demonstrated an immune-supportive role with the use of oral CoQ10. For example, a suboptimal concentration of CoQ10 has been observed in asthmatic patients. They postulated this low level of CoQ10 yielded an antioxidant imbalance, which increased the incidence of asthma.[22] In another study, corticosteroid-dependent bronchial asthmatic patients exhibited a decrease in CoQ10 levels and CoQ10 supplementation resulted in a reduced corticosteroid requirement for symptom relief.[23]

In addition, oral administration of CoQ10 has been shown to enhance the phagocytic activity of macrophages, and to increase the proliferation of granulocytes in response to infection.[21]



CoQ-Zyme 100 Plus™
available in a 60 count bottle (#2617)

CoQ-Zyme 30 Plus™
available in a 60 count bottle (#2616)

Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving	% Daily Value
Thiamin (B1) (as cocarboxylase chloride)	1.5 mg	125%
Riboflavin (B2) (as riboflavin-5-phosphate)	1.7 mg	131%
Niacin (as niacin & niacinamide)	20 mg	125%
Vitamin B6 (as pyridoxal-5-phosphate)	2 mg	118%
Folate (as calcium folinate)	680 mcg DFE	170%
Vitamin B12 (as methylcobalamin)	6 mcg	250%
Biotin	300 mcg	1,000%
Pantothenic acid (as calcium pantothenate)	10 mg	200%
Coenzyme Q10 (naturally derived, emulsified)	100 mg	*
Superoxide Dismutase (from vegetable culture†)	80 mcg	*
Catalase (from vegetable culture†)	80 mcg	*

*** Daily Value not established**

Other ingredients: Capsule shell (gelatin and water), gum arabic and magnesium stearate (vegetable source).

† Specially grown, biologically active vegetable culture (from organic peas, lentils and/or chickpeas) containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten, dairy and GMO free.

RECOMMENDATION: One (1) capsule each day as a dietary supplement or as otherwise directed by a healthcare professional.

CAUTION: Not recommended for pregnant or lactating women.

Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Coenzyme Q10 (emulsified)	30 mg	*
Superoxide Dismutase (from vegetable culture †)	30 mcg	*
Catalase (from vegetable culture †)	30 mcg	*

*** Daily Value not established**

Other ingredients: Cellulose, stearic acid (vegetable source), gum arabic, magnesium stearate (vegetable source), modified cellulose gum, silica and food glaze.

† Specially grown, biologically active vegetable culture (from organic peas, lentils, and/or chickpeas) containing naturally occuring and/or organically bound phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten, dairy and GMO free.

RECOMMENDATION: One (1) tablet each day as a dietary supplement or as otherwise directed by a healthcare professional.

References

1. Stiles J, Sparks B, Klenda B, Pillors M, Bucci L. Enhanced blood levels of coenzyme Q10 from an emulsified form. Second Symposium on Nutrition and Chiropractic Proceedings. 1989 Apr;15-16.

2. Stiles J, Sparks B, Klenda B, Pillors M, Bucci L. Enhanced uptake in humans of coenzyme Q10 from an emulsified form. Third International Congress of Biomedical Gerontology. June, 1989.

3. Lawen A, Martinus RD, McMullen GL, Nagley P, Vaillant F, Wolvetang EJ, Linnane AW. The universality of bioenergetic disease: the role of mitochondrial mutation and the putative interrelationship between mitochondria and plasma membrane NADH oxidoreductase. Mol Aspects Med. 1994 15Suppl:s13-27.

4. Villalba JM, Navarro F, Gómez-Díaz C, Arroyo A, Bello RI, Navas P. Role of cytochrome BS reductase on the antioxidant function of coenzyme Q in the plasm membrane. Mol Aspects Med.1997 18Suppl:S7-13..

5. Gille L, Nohl H. The existence of lysosomal redox chain and the role of ubiquinone. Arch Biochem Biophys. 2000 Mar 15;375(2):347-54.

6. . Crane FL, Sun IL, arra R, MorrS DJ. Coenzyme Q10 in Golgi apparatus membrane redox activity and proton uptake. 1984 In: Folkers K, Yamamura Y. (Eds.). Biomedical and Clinical Aspects of Coenzyme Q. Elsevier, Amsterdam. Pp. 77-86.

7. Linnane A.W., Klos M, Vitetta L. Coenzyme Q10 – Its role as a prooxidant in the formation of superoxide anion/hydrogen peroxide and the regulation of the metabolome. Mitochondrion. June 2007 7(1):S51-S61.

8. Littarru GP, Tiano L. Bioenergetic and antioxidant properties of coenzyme Q10: recent developments. Mol Biotechnol. 2007 7(1):31-7.

9. Pelton R, LaValle JB, Hawkins EB, Krinsky DL. Drug-Induced Nutrient Depletion Handbook. 2nd Edition. 2001 Lexi-Comp, Inc.

10. Marcoff L, Thompson PD. The Role of Coenzyme Q10 in Statin-Associated Myopathy: A Systematic Review. J Am Coll Cardio. 2007 49(23):2231-2237.

11. Rosenfeldt F, Marasco S, Lyon W, Wowk M, Sheeran F, Bailey M, Esmore D, Davis B, Pick A, Rabinov M, Smith J, Nagley P, Pepe S. Coenzyme Q10 therapy before cardiac surgery improves mitochondrial function and in vitro contractility of myocardial tissue. J. Thorac. Cardiovasc. Surg. 2005 129:25-32.

12. Pepe S, Marasco SF, Haas SJ, Sheeran FL, Krum H, Rosenfeldt FL. Coenzyme Q10 in cardiovascular disease. (Review). Mitochondrion. 2007 7S:S154-S167.

13. Gvodzjakova A, Kucharska J, Mizera S, Braunova Z, Schreinerova Z, Schreinerova E, Pechan J, Fabian J. Coenzyme Q10 depletion and mitochondrial energy distrubances in ejection development in patients after heart transplantation. Biofactors. 1999 9(2-4):301-6.

14. Mortensen SA. Overview on coenzyme Q10 as adjunctive therapy in chronic heart failure. Rationale, design and end-points of 'Q-symbio'—a multinational trial. Biofactors. 2003;18:79-89.

15. Belardinelli R, Tiano L, Littarru GP. Oxidative stress, endothelial function and coenzyme Q10. Biofactors. 2009 32(1-4):129-133.

16. Lenaz g, D'Aurello M, Merlo Pich M, Genova ML, Ventura B, Bovina C, Formiggini G, Parenti Castelli G. Mitochondrial bioenergetics in aging. Biochem Biophys Aca. 2000 Aug 15;1459(2-3):397404.

17. Watts GF, Playford DA, Croft KD, Ward NC, Mori TA, Burke V. Coenzyme Q10 improves endothelial dysfunction of the brachial artery in Type II diabetes mellitus. Diabetologia.2002 45(3):420-426.

18. Capaccioli S, Nucci C, Schiavone N, Quattrone A, Carella G. In Vascular Systems of the Optic Nerve and Perioptic Area. 1998 (Bisantis C, Carella G, eds)pp.81-130, I.N.C. Innovation-News-Communication, Rome.

19. Papucci L, Schiavone N, Witort E, Donnini M, Lapucci A, Tempestini A, Formigli L, Zecchi-Orlandini S, Orlandini G, Carella G, Brancato R, Capaccioli S. Coenzyme Q10 prevents apoptosis by inhibiting mitochondrial depolarization indepently of its free radical scavenging property. J Biol Chem. 2003 Jul 25;278(30):28220-8.

20. Ramirez-Tortosa MC, Granados S, Ramirez-Tortosa CL, Ochoa JJ, Camacho P, Garcia-Valdés L, Battino M, Quiles JL. Oxidative stress status in liver mitochondria and lymphocyte DNA damage of atherosclerotic rabbits supplemented with water-soluble coenzyme Q10. Biofactors. 2008 32(1-4):263-73.

21. Gaby Ar. Textbook of Natural Medicine. Pizzorno J, Murry Meds. pp665.

22. Gazdik F, Gvorzdjakova A, Nadvornikova R, Repicka L, Jahnova E, Kucharska J, Pijak MR, Gazdikova K. Decrased levels of coenzyme Q10 in patients with brochial asthma. Allergy. September 2002 57(9): 811-814.

23. Gvozdjakova A, Kucharska J, Bartkovjakova M, Gazdikova K, Gazdik FE. Coenzyme Q10 supplementation reduces corticosteroids dosage in patients with bronchial asthma. Biofactors. 2005 25(1-4): 235-40.

BIOTICS® RESEARCH CORPORATION

(905-475-3554

Biotics Research Canada
Box 283 • Keswick ON L4P 3E2
orders@bioticscan.com