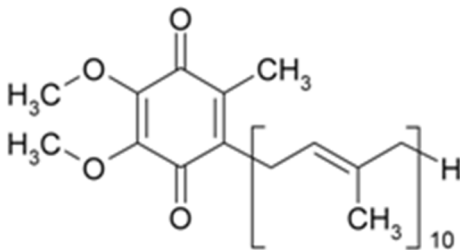


Maximum Strength CoQ₁₀

TECHNICAL SUMMARY

Coenzyme Q₁₀, also called ubiquinone, is present in almost all cells, where it is necessary for mitochondrial energy production.* The body's highest concentrations of coenzyme Q₁₀ (CoQ₁₀) are found in the heart, where constant chemical energy availability is imperative. In addition to its critical role in energy production, CoQ₁₀ also functions as a powerful fat soluble free radical scavenger for vascular structures, as well as for other tissues including the brain and nerves.*

Structure formula:



Chemical name: 2-(3,7-Dimethyl-2,6-octadienyl)-5,6-dimethoxy-3-methyl-2,5-cyclohexadiene-1,4-dione (Ubiquinone)

Allergen and Additive Disclosure: Not manufactured with wheat, gluten, corn, milk, egg, fish or shellfish ingredients. Produced in a GMP facility that processes other ingredients containing these allergens. PEG-free.

Delivery Form: Softgels

ROLE AS NUTRIENT/FUNCTION

CoQ₁₀ has multiple biological functions, primarily based on its ability to undergo redox cycling.* CoQ₁₀ is involved in ATP synthesis (as part of the electron transport chain of the inner membrane of the mitochondrion) and has the ability to act as a free radical scavenger in response to oxidative stress.* CoQ₁₀ in its reduced form (ubiquinol) is a potent lipophilic free radical quencher capable of recycling and regenerating other antioxidants such as vitamins C and E. Other important functions of CoQ₁₀ such as cell signaling and gene expression have also been described.* CoQ₁₀ is especially important for heart muscle function where its concentration is higher than in any other tissue in the body.*

NATUROKINETICS®

Liberation: Dissolution of the softgel capsule is measured in water using a USP testing method with dissolution under 60 minutes.

Absorption: CoQ₁₀ is a lipophilic substance that is absorbed in the intestines. Its uptake is similar to that of other lipid substances and is enhanced by the presence of other fats upon ingestion. Once absorbed, it is incorporated into chylomicrons and transported through the lymphatic system before reaching the bloodstream. CoQ₁₀ is reduced to ubiquinol either during or following absorption in the intestine.

Distribution: CoQ₁₀'s distribution depends on the metabolic activity of tissues and organs. Typically, tissues with high-energy requirements of metabolic activity contain relatively high concentrations of CoQ₁₀. It is

Supplement Facts

Serving Size 1 Softgel

| | Amount Per Serving | % Daily Value |
|-----------------------------------------------|--------------------|---------------|
| Calories | 10 | |
| Total Fat | 0.5 g | < 1%** |
| Total Carbohydrate | < 1 g | < 1%** |
| Vitamin E (as d-alpha Tocopherol) | 20 mg | 133% |
| Coenzyme Q ₁₀ (CoQ ₁₀) | 600 mg | † |
| Soy Lecithin | 50 mg | † |

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

Other ingredients: Rice Bran Oil, Softgel Capsule [bovine gelatin (BSE-free), glycerin, water, annatto extract, zinc oxide] and Beeswax.

- Supports Healthy Heart Muscle*
- With Lecithin & Vitamin E

SUGGESTED USAGE: Take 1 softgel daily with a fat-containing meal, or as directed by your healthcare practitioner.

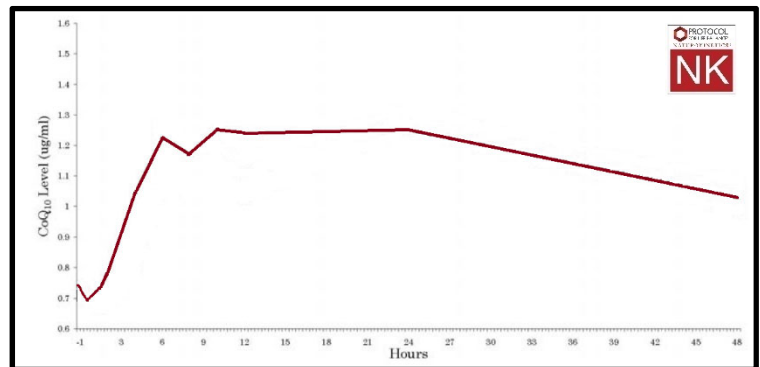


Fig. 1: Plasma concentration of CoQ₁₀ after ingestion of 600 mg CoQ₁₀ in softgels. Adapted from Constantinescu.

primarily found in the heart, kidney, liver and muscles with other smaller reserves present in the brain, intestines, lungs and blood cells (except red blood cells).

Metabolism: Within cells, CoQ₁₀ is a part of the Q cycle located in the inner membrane of mitochondria.* As part of a redox reaction, it is recycled during energy production by donating its electrons.* Data from animal models suggest that CoQ₁₀ is metabolized in all tissues; the metabolites are phosphorylated in the cells.

Elimination: Unabsorbed CoQ₁₀ is eliminated in feces and absorbed CoQ₁₀ is excreted in the GI tract via the bile where it can be partially reabsorbed back into the body for reuse. CoQ₁₀ metabolites resulting from intracellular phosphorylation are excreted into urine. However, it should be noted that the urinary metabolites of CoQ₁₀ only account for a small fraction of the body reserves of CoQ₁₀, and that the major route of elimination of CoQ₁₀ is by way of biliary and fecal excretion.

CLINICAL VALIDATION

Supports physical performance & lessens subjective fatigue sensation.*

In a randomized, double-blind, placebo-controlled study, 17 healthy volunteers were administered 100 mg or 300 mg CoQ₁₀ or a placebo for 8 days leading up to a fatigue-inducing physical task involving workload trials on a bicycle ergometer. The change in maximum velocity from the 30- to the 210-min trial in the 300 mg CoQ₁₀ group was higher than that in the placebo group.* In addition, subjective fatigue sensation measured on a visual analog scale in the 300 mg CoQ₁₀ group after the fatigue-inducing physical task and recovery period was alleviated when compared to the placebo group.*

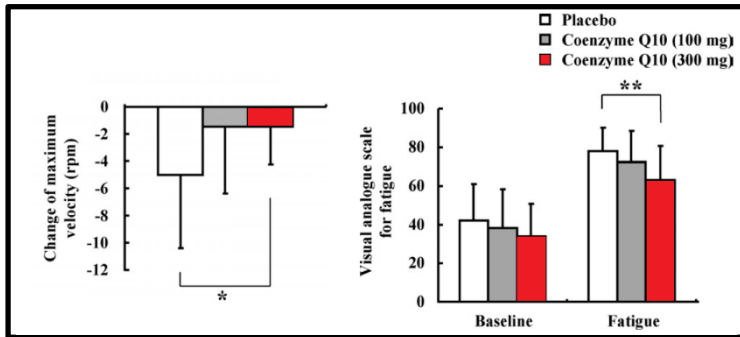


Fig. 2: (Left) Change of maximum velocity. *P<0.05. (Right). Study subjects' subjective fatigue sensation before (baseline) and after (fatigue) the fatigue-inducing physical tasks. Subjects were asked to rate their subjective sensation of fatigue level on a visual analog scale from 0 (no fatigue) to 100 (total exhaustion). **P < 0.01. Adapted from Mizuno et al.

Free radical scavenger.* In a randomized, placebo-controlled study, 10 highly trained male athletes were administered 50 mg CoQ₁₀ or a placebo leading up to a 50 km mountain race. Administration occurred two days prior with dinner, one day prior with each meal, and the day of, and one hour before the race. Several blood markers of oxidative stress and immune function were measured before and after the event.

As expected, intense exercise was associated with an increase in TNF- α , IL-6, 8-hydroxy-20-deoxyguanosine (8-OHdG), and isoprostane levels which are biological signs of the generation of oxidative stress and of a healthy immune response to intense exercise. In the CoQ₁₀ group, modifications of biological markers of oxidative stress (membrane hydroperoxides, 8-OHdG and isoprostane generation, increased catalase, and total antioxidant status) were less pronounced than in the placebo group after exercise. (Figure 3)* Results also indicated that CoQ₁₀ supplementation led to less over-expression of TNF- α after exercise.* Moreover, CoQ₁₀ supplementation lessened exercise-induced creatinine production.*

SAFETY INFORMATION

Tolerability: CoQ₁₀ is generally well tolerated. Some adverse effects that have been reported include minor GI disturbances.

Contraindications: None Known.

INTERACTIONS

Drug Interactions: Concomitant use of CoQ₁₀ with warfarin may affect its anticoagulant effects.

Supplement Interactions: Acacia gum may increase the absorption of CoQ₁₀. CoQ₁₀ may increase beta-carotene levels. CoQ₁₀ has vitamin K-like

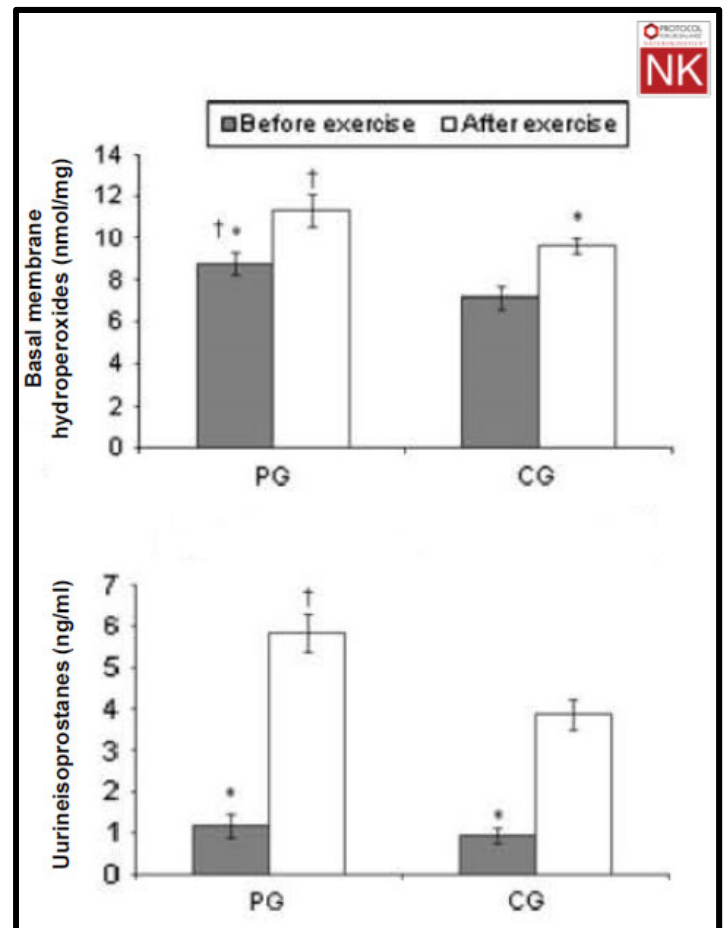


Fig. 3: Biomarkers for oxidative stress was measured from blood samples taken before and after strenuous exercise for both placebo and supplemental groups.

activity and may increase its effects. CoQ₁₀ can affect blood pressure and may have additive effects with other herbs and supplements that affect blood pressure.

Interaction with Lab Tests: CoQ₁₀ may affect prostate-specific antigen (PSA) measurements.

STORAGE

Store in a cool, dry place in original sealed container.