



## **NUCARD 60 Co Q10 (Coenzyme Q 10) 60 mg Capsule**

### **INDICATED CLAIMS:**

- Helps to maintain and support cardiovascular health.

### **GENERAL INFORMATION**

Coenzyme Q<sub>10</sub> or CoQ<sub>10</sub> belongs to a family of substances called ubiquinones. Ubiquinones, also known as coenzymes Q and mitoquinones, are lipophilic, water-insoluble substances involved in electron transport and energy production in mitochondria. The basic structure of ubiquinones consists of a benzoquinone "head" and a terpinoid "tail." The "head" structure participates in the redox activity of the electron transport chain. The major difference among the various coenzymes Q is in the number of isoprenoid units (5-carbon structures) in the "tail." Coenzymes Q contain one to 12 isoprenoid units in the "tail"; 10 isoprenoid units are common in animals.

Coenzymes Q occur in the majority of aerobic organisms, from bacteria to plants and animals. Coenzyme Q<sub>10</sub> is also known as Coenzyme Q (50), CoQ<sub>10</sub>, and CoQ (50), ubiquinone (50), ubiquinol-10 and ubidecarerone. Chemically, CoQ<sub>10</sub> is known as 2, 3-dimethoxy-5methyl-6-decaprenyl-1, 4-benzoquinone. Supplemental CoQ<sub>10</sub> may have cardio protective, cytoprotective and neuroprotective activities.

### **MECHANISM OF ACTION**

CoQ<sub>10</sub> has antioxidant activity in mitochondria and cellular membranes, protecting against peroxidation of lipid membranes. It also inhibits the oxidation of LDL-cholesterol. LDL-cholesterol oxidation is believed to play a significant role in the pathogenesis of atherosclerosis.

CoQ<sub>10</sub> is biosynthesized in the body and shares a common synthetic pathway with cholesterol. CoQ<sub>10</sub> levels decrease with aging in humans. Why this occurs is not known but may be due to decreased synthesis and/or increased lipid peroxidation which occurs with aging.

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**For Accidental Overdose** (such as child ingesting formula)

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**For Professional Use Only**

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## PHARMACOKINETICS

CoQ<sub>10</sub> is absorbed from the small intestine into the lymphatics; from there it enters the blood. Absorption of CoQ<sub>10</sub> is poor. Well over 60% of an oral dose is excreted in the feces. Furthermore, absorption of CoQ<sub>10</sub> is highly variable and depends not only on food intake but also on the amount of lipids present in the food. Absorption is lower on an empty stomach and greater when taken with food of high lipid content. In the blood, CoQ<sub>10</sub> is partitioned into the various lipoprotein particles, including VLDL, LDL and HDL.

It takes about three weeks of daily dosing with CoQ<sub>10</sub> to reach maximal serum concentrations, which then plateau with continuous daily dosing. CoQ<sub>10</sub> is distributed to the various tissues of the body and is able to enter the brain. The main elimination of CoQ<sub>10</sub> occurs via bile.

Nucard 60 with CoQ<sub>10</sub> 60mg fermented from yeast — identical to body's own CoQ<sub>10</sub> maintains and support cardiovascular health.

### **NUCARD 60 Co Q10 (Coenzyme Q 10) 60 mg Capsule**

#### **Product Information**

Available as 100 capsules

Each capsule contains:

Coenzyme Q<sub>10</sub> 60mg

Non-medicinal ingredients: Microcrystalline cellulose, Magnesium Stearate, Dicalcium phosphates dehydrate or Stearate, colloidal Silicon.

Directions for use: Adult: Take 1 capsule with meals twice daily

#### **Benefits:**

- Helps to maintain and support cardiovascular health.
- Plays a role in energy production
- Helps to reduce free radical damage in the body
- Protects cells from premature aging
- Medium potency ideal for low-dose statin use, anti-aging, energy boost
- Supports healthy CoQ<sub>10</sub> levels for patients prescribed statin drugs

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## **CONTRAINDICATIONS**

Known hypersensitivity to a CoQ<sub>10</sub>-containing product.

## **PRECAUTIONS**

There is one report of CoQ<sub>10</sub> decreasing the effectiveness of warfarin. Those taking warfarin should be aware of this possibility.

Because of lack of long-term safety studies, pregnant women and nursing mothers should avoid CoQ<sub>10</sub> supplements.

Clinical reports from Japan suggest that supplemental CoQ<sub>10</sub> may improve beta-cell function and glycemic control in type II diabetics. CoQ<sub>10</sub> does not appear to improve glycemic control in type I diabetics. Diabetics should be made aware of this possibility, and those diabetics who do use supplemental CoQ<sub>10</sub> should determine by appropriate monitoring if they need to make any adjustments in their diabetic Medications.

## **ADVERSE REACTIONS**

Mild gastrointestinal symptoms such as nausea, diarrhea and epigastric distress have been reported, particularly with higher doses (200 milligrams or more daily).

## **INTERACTIONS**

### **DRUGS**

Antidiabetic predications: CoQ<sub>10</sub> may improve glycemic control in some type II diabetics. If this were to occur, antidiabetic medications might need appropriate adjusting.

Beta Blockers: Some beta blockers, in particular propanolol, have been reported to inhibit some CoQ<sub>10</sub>-dependent Enzymes

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Corticosteroids: One study found that CoQ<sub>10</sub> reduced corticosteroid dosage in patients with bronchial asthma.

Doxorubicin: CoQ<sub>10</sub> may help ameliorate the cardio toxicity of doxorubicin.

Statins: CoQ<sub>10</sub> and cholesterol share the same metabolic pathways. Inhibition of the enzyme 3-hydroxyl-3-methylglutonyl coenzyme A (HMG-CoA) reductase would be expected to decrease CoQ<sub>10</sub> levels. The statin drugs lovastatin, simvastatin and pravastatin are known to decrease CoQ<sub>10</sub> levels in humans. It is likely that all statins have this effect.

Warfarin: There is one report of CoQ<sub>10</sub> decreasing the effectiveness of warfarin.

## **DIETARY SUPPLEMENTS**

Alpha-Tocopherol: Elevation in CoQ<sub>10</sub> levels in mitochondria by dietary supplementation is linked to a corresponding rise in ot-tocopherol content.

## **FOOD**

Piperine: Piperine, found in black pepper, may increase plasma levels of CoQ<sub>10</sub>.

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