VESIsorb® Ubiquinol-QH 100 mg
Pre-digested colloidal solubilised ubiquinol with VESIsorb® technology

Technical paper & product information

Summary
VESIsorb® Ubiquinol-QH combines the active ‘body-ready’ form of Coenzyme Q10 (CoQ10) with the novel patented VESIsorb® delivery system, clinically proven to overcome bioavailability issues associated with large fat-soluble nutrients. VESIsorb® Ubiquinol-QH ensures significantly higher plasma concentrations that reach therapeutic levels faster and are sustained for longer than any other delivery system or form of CoQ10. Contrary to other delivery forms of CoQ10, this highly advanced delivery system achieves and maintains clinically effective plasma concentrations of CoQ10, proven to support cardiovascular function, energy production, reduce the risk of neurodegenerative disease and provide potent antioxidant activity with just one 100 mg capsule daily.

Understanding CoQ10 – ubiquinone and ubiquinol
Mitochondria within cells are responsible for creating more than 90% of the energy needed by the body to sustain life and support growth; CoQ10 plays an essential role in mitochondrial electron transport and, as such, is fundamental for energy production in cells. In addition, CoQ10 is a potent antioxidant that also plays an important role in regenerating other antioxidants including vitamin E, vitamin C and lipoic acid. Its ability to quench free radicals helps to maintain the structural integrity and stability of mitochondrial and cell membranes. [1]

CoQ10 exists as ubiquinone (the oxidised CoQ10, spent form) and ubiquinol (the reduced and activated, antioxidant form). In order for CoQ10 to play a role in energy production and exhibit an antioxidant effect, the body must metabolise it to its antioxidant form ubiquinol. CoQ10 was originally recognised in the 1950s, but because ubiquinol is easily oxidised outside the body, the stabilised form of ubiquinol (Kaneka QH™) has only been available for use in supplements since 2006. Before this, dietary supplements containing CoQ10 were only available in the form of ubiquinone and growing numbers of studies consistently show Kaneka QH™ supplements to be superior to ubiquinone supplements at both the cellular and molecular level and especially so for therapeutic outcomes.
**VESIsorb® technology**

On contact with the aqueous contents of the stomach, VESIsorb® naturally self-assembles into colloidal droplets (micro-emulsion) which completely dissolve in water and are effectively fast-tracked from the gut lumen, through the unstirred water layer barrier that lines the gut wall, directly into the enterocyte cell for immediate transfer to the circulatory system. In addition, VESIsorb® acts to protect ubiquinol from the stomach acid, thereby making it more stable and resistant to oxidation.

Whilst the dose of CoQ10/ubiquinol may seem irrelevant therapeutically, it is the blood plasma level achieved by the supplement that is the significant determinant of the effectiveness of the treatment. [2] As a lipid-soluble nutrient, CoQ10 absorption and bioavailability is generally poor; as much as 60% of the dose is eliminated in the faeces. [3] Highly bioavailable supplements that produce superior serum levels will therefore be more cost-effective than supplements with poor bioavailability but at a greater dose. The most commonly available formulations of CoQ10/ubiquinol are found in powder form or dispersed in oil suspensions and are associated with relatively low bioavailability.[4] Because clinical outcomes are dependent on increasing the bioavailability, the unique VESIsorb® delivery system is superior to all other forms of delivery, significantly improving absorption rates and overcoming bioavailability issues associated with other forms of delivery. For example, VESIsorb®-delivered CoQ10 results in almost a 2-fold increase in peak blood levels (C_{max}) and nearly a 3-fold increase in relative bioavailability (AUC_{0-10h}) compared to oil-based and even watersolubilised formulations. [5] VESIsorb® Ubiquinol-QH offers the most effective absorption for enhanced tissue distribution, leading to superior health benefits.

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**Ubiquinol mechanisms & health benefits**

- **Energy production:**
  - Ubiquinol is required to convert energy from food into ATP by supporting the transport of electrons within the energy-producing organelles inside cells, known as mitochondria.

- **Antioxidant activity:**
  - Ubiquinol is a powerful fat-soluble antioxidant that prevents the generation of free radicals – thereby protecting fats, DNA and other proteins from oxidative damage.
  - Ubiquinol also regenerates other antioxidants including vitamin E, vitamin C and lipoic acid.

- **Cardioprotection:**
  - Ubiquinol protects blood vessels and heart muscle from free radical damage.

- **Neuroprotection:**
  - Ubiquinol protects the brain and nervous system from free radical damage.

- **Anti-inflammatory:**
  - Ubiquinol exerts anti-inflammatory properties by decreasing the secretion of pro-inflammatory cytokines – chemical messengers that affect immune system function.

- **Promotes thermogenesis:**
  - By supporting the function of thermogenin, a protein that derives energy from fatty acids, CoQ10 generates body heat, and helps maintain ideal body weight.

- **Cellular communication & gene expression:**
  - Ubiquinol improves the ability of cells to receive messages and influences how some genes respond to those messages.

- **Supports organ metabolism:**
  - The concentration of ubiquinol varies greatly among different organs – higher amounts are found in tissue with increased metabolic activity such as the heart, kidney and liver tissue.

- **Supports normal cell cycle:**
  - Ubiquinol promotes cell growth and inhibits cell death in healthy tissues.
Synthesis and deficiency

CoQ10 is a naturally occurring compound, synthesised endogenously and found in small levels in the diet. Tissue CoQ10 levels generally peak around the age of 20-30 and decline with increasing age. Found in foods such as fish, organ meats and germ of whole grains, the average diet is estimated to provide approximately 10 mg/day of CoQ10. Endogenous CoQ10 synthesis is a complex, multi-step process, requiring several vitamin cofactors (including vitamin B2 – riboflavin, vitamin B3 – niacinamide, vitamin B5 – pantothenic acid, vitamin B6 – pyridoxine, vitamin B9 – folic acid, vitamin B12 – cyanocobalamin and vitamin C), as well as several trace elements. A deficiency in any of these nutrients has the potential to impact negatively on CoQ10 levels. Insufficient dietary CoQ10 intake, impairment in CoQ10 biosynthesis, excessive utilisation of CoQ10 or any combination of the three, may lead to deficiency. The conversion of CoQ10 to ubiquinol is also impeded by increasing age and some health conditions. Indeed, significantly decreased levels of CoQ10 and ubiquinol have also been noted in a wide variety of diseases, especially those associated with oxidative stress. [6]

CoQ10 and cholesterol-lowering drugs

HMG-CoA reductase is an enzyme that plays a critical role in the regulation of cholesterol synthesis, as well as CoQ10 synthesis. HMG-CoA reductase inhibitors, generally known as statins (such as atorvastatin, cerivastatin, lovastatin, pravastatin, simvastatin), are commonly used to treat elevated blood cholesterol levels by blocking cholesterol biosynthesis; in doing so, they also block CoQ10 biosynthesis.[7, 8] Taking ubiquinol supplements can correct the deficiency caused by such medications without affecting the medication’s positive effects on cholesterol levels, and can improve statin-induced myopathy. [9]

| Therapeutic applications for VESIsorb® Ubiquinol-QH |
|-----------------------------------------------|-----------------------------------------------|
| ✓ Cardiovascular disease | ✓ Statin-associated myopathy |
|   o Cardiomyopathy | ✓ Mitochondrial disease |
|   o Congestive heart failure | ✓ Muscular dystrophy |
|   o Angina | ✓ Chronic fatigue conditions |
|   o Arrhythmias | ✓ Diabetes |
|   o Hypertension | ✓ Cell cycle regulation |
|   o Atherosclerosis | ✓ Chronic obstructive pulmonary disease |
| ✓ Neurodegenerative diseases | ✓ Migraine |
|   o Huntington’s disease | ✓ Immune disorders |
|   o Parkinson’s disease | ✓ HIV/AIDS |
|   o Alzheimer’s disease | ✓ Periodontal disease |
| ✓ Neuromuscular diseases | ✓ Male infertility |
| ✓ Chronic fatigue syndrome | |

Supplementation and dosing

Supplementing with ubiquinol is ideal for those with reduced ability to convert ubiquinone into the reduced, active form ubiquinol. Igennus VESIsorb® Ubiquinol-QH offers additional bioavailability and superior benefits over standard ubiquinol supplements of the same dose and allows optimal blood serum levels of CoQ10 to be restored quickly and efficiently with one simple 100 mg/day dose or 100–200 mg/day when treating chronic disease conditions such as cardiovascular disease [10] or neurodegenerative disease. [11]
Product information
Capsules per unit: 30 x 100 mg
RRP: £39.99
Shelf life from manufacture: 1095 days

Product features

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<tr>
<th>Commercial</th>
<th>Technical</th>
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<tr>
<td>✓ Pre-digested ubiquinol is absorbed faster, reaches higher blood plasma concentrations &amp; offers sustained action over oil-based forms</td>
<td>✓ 'Bioactive' form of CoQ10 with dual benefits as a coenzyme and antioxidant</td>
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<tr>
<td>✓ Unprecedented bioavailability</td>
<td>✓ Solubilised ubiquinol improves absorption and uptake</td>
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<td>✓ Clinically effective with 1-a-day dose</td>
<td>✓ Patented VESIsorb® delivery system mimics the natural transport of the intestine, pre-digesting and emulsifying the ubiquinol into microscopic water-soluble particles that are easily absorbed into the bloodstream for optimal tissue distribution. [5]</td>
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<tr>
<td>✓ Offers benefits for cardiovascular health, energy production within the heart, brain &amp; muscles and protection from free radicals</td>
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Nutritional information

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<tr>
<th>1 capsule</th>
<th>mg/serving</th>
<th>% RDA</th>
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<tr>
<td>Ubiquinol (Kaneka-QH™) activated form of coenzyme Q10</td>
<td>100 mg</td>
<td>n/a</td>
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<tr>
<td>Vitamin E (α-tocopherol)</td>
<td>6.7 mg α-TE</td>
<td>56%</td>
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Ingredients
Ubiquinol activated coenzyme Q10 (Kaneka-QH™); capsule shell (emulsifier: gelatine; glycerol; colour: caramel); medium chain triglycerides; emulsifiers: non-ionic surfactant, polyglycerol esters of fatty acids; antioxidant: vitamin E.

Free from:
✓ Dairy
✓ Artificial colourings & flavourings
✓ Gluten
✓ Not tested on animals
✓ Lactose
✓ Non-GMO
✓ Soya

Directions for use
Adults and children aged twelve years and over should take 1 capsule daily. In severe cases, up to 2 capsules daily may be required. It is not advisable to exceed the above dose unless advised by a healthcare practitioner. Take VESIsorb® Ubiquinol-QH with food for optimum absorption.

Warnings and contraindications
This product should not be used as a substitute for a balanced diet. If you are taking any blood-thinning or hypertensive medications, do not take this product without prior medical advice. Pregnant or lactating women should consult their doctor before taking any food supplement. Keep out of the reach of children and away from sunlight. There are no known drug or nutrient interactions when taking ubiquinol.
References


