

An Ally in Supporting Cardiovascular Wellness

Kaneka Ubiquinol[®], manufactured exclusively by Kaneka Nutrients, supports cardiovascular health.

Ubiquinol, the active antioxidant form of coenzyme Q10 (CoQ10), is found naturally throughout our cells, tissues, and organs. It is required for 95% of cellular energy production,¹ and supports cellular function and antioxidant activity, aiding physiological processes linked to cardiovascular health.

Ubiquinol plays an important part in supporting mitochondrial health by helping to neutralize free radicals, reduce oxidative stress in the body, and protect mitochondrial integrity. It also supports the efficiency of the mitochondrial electron transport chain (ETC), aiding energy production and facilitating other critical mitochondrial functions.²

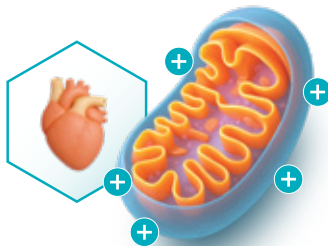
Ubiquinol supports mitochondrial functions and cellular processes that contribute to cellular homeostasis and overall wellness. When these functions decline, they may contribute to cellular changes that, over time, can influence the health of bodily organs and systems, potentially affecting age-related aspects of overall wellness,^{3,4} including cardiovascular health.

The Impact of Mitochondrial Health on Cardiovascular Health

Maintaining mitochondrial health and proper function is vital for supporting cardiovascular health. Mitochondria are the powerhouses of the cell, generating most of the energy needed for cell activities. They are also the primary source of free radical production.²

The high metabolic rate of the heart's cells leads to elevated production of reactive oxygen species (ROS), including free radicals. **With age, natural antioxidant defenses and ubiquinol levels decline,** reducing the body's ability to effectively neutralize these ROS.

Free radicals can also react with LDL cholesterol in the blood, leading to the formation of oxidized LDL, which can influence endothelial cell function and **contribute to factors that affect vascular health over time.**⁵



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.



The ETC in mitochondria is key for cellular energy production.

Through the ETC, mitochondria convert nutrients into adenosine triphosphate (ATP), the main energy currency for cellular functions.

Mitochondria's role beyond energy production^{3,4}:

- Initiating repair mechanisms, including a process known as "programmed cell death," which eliminates damaged cells, while recycling usable mitochondrial fragments.
- Governing the flow of small molecules, maintaining cell homeostasis.
- Regulating the expression of certain genes, including those involved in inflammatory processes.

Impact of ROS generation on mitochondria²:

- The ETC generates superoxide, a type of ROS, as a normal part of cellular metabolism.
- Oxidative stress occurs when ROS production overwhelms the body's antioxidant defenses.
- Excess ROS can interact with cell components—such as lipids, proteins, and DNA—in ways that may affect mitochondrial efficiency and cellular function.^{4,6}
- Mitochondrial disruption from ROS can trigger further ROS production, creating a cycle that may affect overall cellular health.^{4,6}

Nutrients.Sales@Kaneka.com

KanekaNutrients.com



Formats

Kaneka Ubiquinol® is available as a pure crystalline powder for use in the following product applications:

- Softgels
- Gummies
- Cap-within-cap
- Liposomal formulations
- Liquid capsules
- Other light and oxygen-controlled environments

Kaneka Ubiquinol® is also available in an air-stable form as Q30®, a 30% Ubiquinol powder. Additional applications include:

- Stick packs
- Sachets
- Soft chews

Packaging

- 1 kg or 5 kg units
- MOQ: 1 kg
- Q30® MOQ: 3 kg



Safety

Kaneka Ubiquinol® has a well-established safety profile as demonstrated by extensive clinical trial data.

Kaneka
NUTRIENTS

Nutrients.Sales@Kaneka.com

KanekaNutrients.com

The Role Kaneka Ubiquinol® Plays in Cardiovascular Wellness

Ubiquinol's lipid solubility allows it to localize within the mitochondria⁷, where it helps neutralize ROS, supporting the health and function of cardiac cells.^{4,5,8} **The heart has the highest concentration of mitochondria**—and therefore ubiquinol—of any organ, helping to meet its high-energy demands and defend against oxidative stress.

Ubiquinol's lipid solubility also enables it to bind to lipid-based LDL particles in the blood, where it provides antioxidant support, which protects LDL from oxidation and contributes to a healthy endothelial environment.^{4,9}

Research shows that ubiquinol supplementation supports cardiovascular health by:

Replenishing and maintaining healthy ubiquinol and total CoQ10 levels^{5,10}

Maintaining healthy levels of blood markers associated with cardiovascular health.^{9,11}



Supporting vascular health by aiding healthy vasodilation, maintaining nitric oxide levels, and helping to protect LDL from oxidation.^{9,12}

Replenishing CoQ10 blood levels affected by statin cholesterol medicines.¹³

Absorption and Bioactivity



Kaneka Ubiquinol® has been shown to be **2x better absorbed than a conventional CoQ10** supplement.¹⁴



Research demonstrates that 200 mg of Kaneka Ubiquinol® **increases ubiquinol levels by approximately 8x** compared to baseline in healthy adults when taken daily for at least 30 days.¹⁰

Unlike conventional CoQ10 supplements, **Kaneka Ubiquinol® requires no conversion in the body to perform its antioxidant functions**, making it more readily available for the body to utilize.^{9,15}

For those already using CoQ10, **switching to Kaneka Ubiquinol® may offer enhanced absorption and bioavailability.**

References

1. Martini FH. Muscle tissue. In: *Fundamentals of Anatomy and Physiology*, 12th ed. Upper Saddle River, NJ: Pearson; 2023:943-50.
2. Bentinger M, et al. The antioxidant role of coenzyme Q. *Mitochondrion*. 2007;7(Suppl):S41-50.
3. Adebayo M, et al. Mitochondrial fusion and fission: the fine-tune balance for cellular homeostasis. *FASEB J*. 2021;35(6):e21620.
4. Pallotti F, et al. The roles of coenzyme Q in disease: direct and indirect involvement in cellular functions. *Int J Mol Sci*. 2021;23(1):128.
5. Lu Y, et al. The functional role of lipoproteins in atherosclerosis: novel directions for diagnosis and targeting therapy. *Aging Dis*. 2022;2(13):491-520.
6. Sies H, Jones D. Oxidative stress. In: Fink G, ed. *Encyclopedia of Stress*, 2nd ed. Vol. 3. Amsterdam, Netherlands: Elsevier; 2007:45-8.
7. Littarru GP, Tian L. Bioenergetic and antioxidant properties of coenzyme Q10: recent developments. *Mol Biotechnol*. 2007;37(1):31-7.
8. Forsmark-Andrée P, Ernster L. Evidence for a protective effect of endogenous ubiquinol against oxidative damage to mitochondrial protein and DNA during lipid peroxidation. *Mol Aspects Med*. 1994;15(Suppl):S73-81.
9. Sabbatinelli J, et al. Ubiquinol ameliorates endothelial dysfunction in subjects with mild-to-moderate dyslipidemia: a randomized clinical trial. *Nutrients*. 2020;12(4):1098.
10. Hosoe K, et al. Study on safety and bioavailability of ubiquinol (Kaneka QH) after single and 4-week multiple oral administration to healthy volunteers. *Regul Toxicol Pharmacol*. 2007;47(1):19-28.
11. Onur S, et al. Ubiquinol reduces gamma-glutamyltransferase as a marker of oxidative stress in humans. *BMC Res Notes*. 2014;7:427.
12. Stocker R, et al. Ubiquinol-10 protects human low-density lipoprotein more efficiently against lipid peroxidation than does alpha-tocopherol. *Proc Natl Acad Sci USA*. 1991;88(5):1646-50.
13. Zlatohlavek L, et al. The effect of coenzyme Q10 in statin myopathy. *Neuro Endocrinol Lett*. 2012;33 (Suppl 2):98-101.
14. Langsjoen PH, Langsjoen AM. Comparison study of plasma coenzyme Q10 levels in healthy subjects supplemented with ubiquinol versus ubiquinone. *Clin Pharmacol Drug Dev*. 2014;3(1):13-17.
15. Kubo H, et al. Orally ingested ubiquinol-10 or ubiquinone-10 reaches the intestinal tract and is absorbed by the small intestine of mice mostly in its original form. *J Clin Biochem Nutr*. 2023;72(2):101-6.

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.