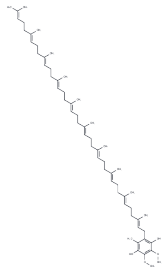
Data Sheet (Cat.No.T13243)

TargetMol

Ubiquinol

Chemical Properties



CAS No. : 992-78-9

Formula: C59H92O4

Molecular Weight: 865.36

Storage: Store at low temperature,Store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Ubiquinol, the biologically active reduced form of coenzyme Q10 (CoQ10), Ubiquinol exerts its potent bioenergetic and antioxidant effects through the redox capability of its benzoquinone head group to accept and donate electrons, making it a promising therapeutic candidate for improving muscle function and physical performance.
Targets(IC50)	Antioxidant
In vitro	The CoQH2 analogue Ubiquinol (mitoCoQH2) is used to protect DHODH cells from suppressing GPX4 (i.e. RSL3 and ML162), which has a fatal effect on the lipid profile of the granular body. [5]
In vivo	The levels of these homologues are highest in heart with lesser amounts occurring in kidney, liver and other organs. In liver and blood plasma, the UQred homologue amounted to 70-80% of the total UQ (UQox + Ubiquinol = t-UQ). Ubiquinol is less than 30% of t-UQ in other tissues and blood cells. t-UQ is much higher in leukocytes and platelets in blood than in erythrocytes. In erythrocytes, t-UQ is exclusively located in the cell membranes.Ubiquinol is also found in all subcellular components isolated from the liver and kidney, and its ratio is approximately the same as the ratio of ubiquinol/t-UQ in the entire organ. The levels of Ubiquinol per mg protein in subcellular fractions from liver is highest in mitochondria, with lesser amounts present in plasma membranes, lysosomes, Golgi complex, nuclei, microsomes and cytosol. In the mitochondria, the outer membranes are richer in t-UQ than the inner membranes[4].

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble) DMSO: 5 mg/mL (5.78 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.1556 mL	5.7779 mL	11.5559 mL
5 mM	0.2311 mL	1.1556 mL	2.3112 mL
10 mM	0.1156 mL	0.5778 mL	1.1556 mL
50 mM	0.0231 mL	0.1156 mL	0.2311 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Grammenandi K, et al. Low-Molecular-Weight Hydrophilic and Lipophilic Antioxidants in Nonmelanoma Skin Carcinomas and Adjacent Normal-Looking Skin. Skin Pharmacol Physiol. 2016;29(6):324-331.
Yamamoto Y, et al. Plasma ratio of ubiquinol and ubiquinone as a marker of oxidative stress. Mol Aspects Med. 1997;18 Suppl:S79-84.
Zhang Y, et al. Ubiquinol is superior to ubiquinone to enhance Coenzyme Q10 status in older men. Food Funct. 2018 Nov 14;9(11):5653-5659.
Takahashi T, et al. Distribution of ubiquinone and ubiquinol homologues in rat tissues and subcellular fractions. Lipids. 1993 Sep;28(9):803-9.
Deng H, et al. Ubiquinol-mediated suppression of mitochondria-associated ferroptosis is a targetable function of lactate dehydrogenase B in cancer. Nat Commun. 2025 Mar 16;16(1):2597.