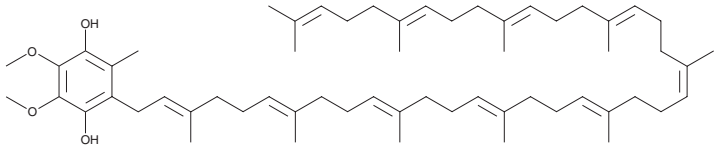
PRODUCT INFORMATION

Ubiquinol

Item No. 19677

CAS Registry No.: 992-78-9
Formal Name: 2-[3,7,11,15,19,23,27,31,35,39-decamethyl-2E,6E,10E,14E,18E,22E,26E,30E,34E,38-tetracontadecaen-1-yl]-5,6-dimethoxy-3-methyl-1,4-benzenediol
Synonyms: Dihydro Coenzyme Q_{10}, Reduced Coenzyme Q_{10}
MF: $C_{59}H_{92}O_4$
FW: 865.4
Purity: ≥90%
Supplied as: A crystalline solid
Storage: -80°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ubiquinol is supplied as a crystalline solid. A stock solution may be made by dissolving the ubiquinol in the solvent of choice, which should be purged with an inert gas. Ubiquinol is soluble in chloroform.

Description

Ubiquinol is a reduced form of coenzyme Q_{10} (CoQ_{10}; Item No. 11506), which exists in three redox states: fully oxidized (CoQ_{10}/ubiquinone), partially reduced (semiquinone/ubisemiquinone), and fully reduced (ubiquinol).[1] CoQ_{10} acts as an electron shuttle in the electron transport chain *via* its reduction to ubiquinol between mitochondrial complexes I and II, also known as NADH dehydrogenase and succinate dehydrogenase, respectively, and mitochondrial complex III, also known as cytochrome bc_1 complex.[2,3] CoQ_{10} is also reduced to ubiquinol by ferroptosis suppressor protein 1 (FSP1) with NADPH as a cofactor, and ubiquinol traps lipid peroxyl radicals and inhibits lipid peroxidation helping to prevent ferroptosis.[4]

References

1. Ernster, L. and Dallner, G. Biochemical, physiological and medical aspects of ubiquinone function. *Biochim. Biophys. Acta* **1271(1)**, 195-204 (1995).
2. Crane, F.L. Biochemical functions of coenzyme Q_{10}. *J. Am. Coll. Nutr.* **20(6)**, 591-598 (2001).
3. Acosta, M.J., Fonseca, L.V., Desbats, M.A., *et al.* Coenzyme Q biosynthesis in health and disease. *Biochim. Biophys. Acta* **1857(8)**, 1079-1085 (2016).
4. Doll, S., Freitas, F.P., Shah, R., *et al.* FSP1 is a glutathione-independent ferroptosis suppressor. *Nature* **575(7784)**, 693-698 (2019).

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