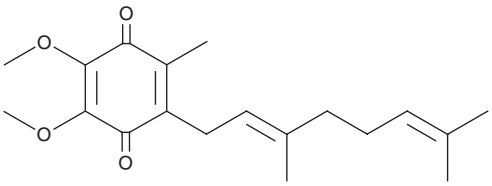
PRODUCT INFORMATION

Coenzyme Q_2

Item No. 17327

CAS Registry No.: 606-06-4
Formal Name: 2-[(2E)-3,7-dimethyl-2,6-octadien-1-yl]-5,6-dimethoxy-3-methyl-2,5-cyclohexadiene-1,4-dione
Synonyms: CoQ_2, Ubiquinone-2, Ubiquinone Q_2
MF: $C_{19}H_{26}O_4$
FW: 318.4
Purity: ≥95%
UV/Vis.: λ_{max}: 274 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Coenzyme Q_2 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of coenzyme Q_2 in these solvents is approximately 10 mg/ml.

Coenzyme Q_2 is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Coenzyme Q_2 (CoQ_2) is a biosynthetic precursor to the electron transport chain cofactor CoQ_{10} (Item No. 11506) and an inhibitor of mitochondrial complex I, also known as NADH dehydrogenase.[1,2] It is an electron acceptor that accepts electrons from mitochondrial complex I. CoQ2 inhibits the proliferation of BALL-1 human B cell acute lymphoblastic leukemia cells (IC_{50} = 20 µM) and induces apoptosis in Huh7 and HepG2 hepatoma cells when used at a concentration of 100 µM.[3] It increases the production of reactive oxygen species (ROS) in BALL-1 cells but inhibits ROS production in mitochondrial membranes derived from bovine heart when used in combination with the mitochondrial complex I inhibitors rotenone (Item No. 13995), piericidin A (Item No. 15379), or rolliniastatin 1 or -2.[1,3] CoQ_2 increases the production of hydrogen peroxide in isolated rabbit heart mitochondria and decreases it in isolated rabbit liver mitochondria.[4]

References

1. Fato, R., Bergamini, C., Bortolus, M., *et al. Biochim. Biophys. Acta*. **1787(5)**, 384-392 (2009).
2. Ziegler, D. and Rieske, J.S. *Arch. Biochem. Biophys.* **97**, 231-235 (1962).
3. Esaka, Y., Nagahara, Y., Hasome, Y., *et al. Biochim. Biophys. Acta* **1724(1-2)**, 49-58 (2005).
4. Gharib, A., De Paulis, D., Li, B., *et al. J. Mol. Cell. Cardiol.* **52(5)**, 1091-1095 (2012).

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