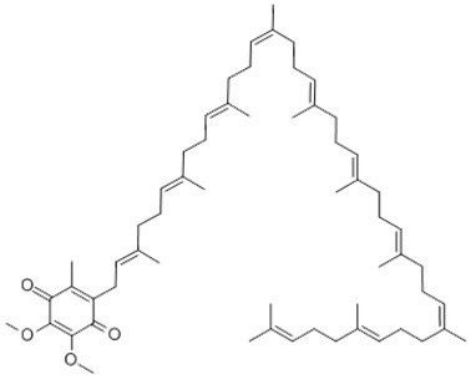
Natural Products

ChemFaces

Coenzyme Q10 Datasheet

5th Edition (Revised in January, 2017)

[Product Information]



Name: Coenzyme Q10

Catalog No.: CFN99165

Cas No.: 303-98-0

Purity: >=98%

M.F: $C_{59}H_{90}O_4$

M.W: 863.36

Physical Description: Yellow cryst.

Synonyms:COQ10;Q-Gel;Ensorb;Coenz10;Kudesan;Carenone;Eiquinon;neuqinon.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food and cosmetic research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Ingredient in supplements, beverages;
7. Others.

[Source]

From *Gibberella fujikuroi.*

[Biological Activity or Inhibitors]

The level of Coenzyme Q10(CoQ10), as antioxidant capacity, is significantly lower in diabetic patients than in controls; plasma and platelet MDA, as a marker of oxidative stress, are significantly higher in diabetic patients than in controls, thus, type 2 diabetic patients are at increased risk of oxidative stress manifested by increased plasma MDA as well as platelet MDA and decreased CoQ10.[1]

Coenzyme Q10 and alpha-lipoic acid are found naturally in mitochondria and act as potent antioxidants; treatment with coenzyme Q10 plus alpha-lipoic acid can significantly restore contractile responses to all forms of stimulation, treatment also has mitochondrial and neuronal effects and reduces protein nitration and carbonylation,demonstrates that coenzyme Q10 and alpha-lipoic acid supplementation can improve bladder function after outlet obstruction.[2]

Coenzyme Q10 has neuroprotective effect in the cerebral ischemia via as a potent antioxidant and oxygen derived free radicals scavenger. [3]

Treatment with coenzyme Q10 in patients with myocardial infarction (MI) may be beneficial in patients with high risk of atherothrombosis.[4]

The combination of Coenzyme Q(10) and creatine produces additive neuroprotective effects on improving motor performance and extending survival in the transgenic R6/2 HD mice, suggests that combination therapy using CoQ(10) and creatine may be useful in the treatment of neurodegenerative diseases such as Parkinson's disease and Huntington's Diseases.[5]

Coenzyme Q(10) supplementation improves endothelial function of conduit arteries of the peripheral circulation in dyslipidaemic patients with Type II diabetes, the mechanism could involve increased endothelial release and/or activity of nitric oxide due to improvement in vascular oxidative stress, an effect that might not be reflected by changes in plasma F(2)-isoprostane concentrations.[6]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][7]

Mobile phase: Methanol-hexane-Acetic acid- Isopropanol -0.42% Sodium acetate =55:9: 1:1;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 275 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Elghoroury E A, Raslan H M, Badawy E A, *et al. Blood Coagul. Fibrin.,2009, 20(4): 248-51.*

[2] Juan Y S, Levin R M, Chuang S M, *et al. J. Urology, 2008, 180(180):2234-40.*

[3] Ostrowski R P. *Brain Res. Bull.,2000, 53(4):399-407.*

[4] Singh R B, Neki N S, Kartikey K, *et al. Mol. Cell. Biochem., 2003, 246(1):75-82.*

[5] Yang L C, Calingasan N Y, Wille E J, *et al. J. Neurochem.,2009, 109(5):1427-39.*

[6] Watts G F, Playford D A, Croft K D, *et al. Diabetologia, 2002, 45(3):420-6.*

[7] Qu J, Li X. *Chinese Ophthalmic Research, 2010, 28(3):253-6.*

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