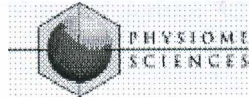


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NON-ENZYMATIC COMPONENTS OF ANTIOXIDANT DEFENSE SYSTEM IN SOME TISSUES OF RATS TREATED WITH COENZYME Q₁₀

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Coenzyme Q (CoQ) is present in almost all living organisms where it exhibits antioxidant properties and also represents an obligatory component of the mitochondrial respiratory chain (2). CoQ may prevent lipid peroxidation, protects DNA from oxidation and protects organism from oxidative stress induced by various toxic agents (1). The scope of our study was to investigate the concentrations of ascorbic acid (AsA) and vitamin E (Vit E) in the liver, kidneys, heart and testes, as well as CoQ concentration in the liver, kidneys and testes of male, two months old *Wistar albino* rats treated with 20 mg/kg of coenzyme Q₁₀ (CoQ₁₀) dissolved in olive oil, i.m., every fifth day, during 30 days. An average intake of CoQ₁₀ was 16 mg/kg/dose. All obtained results were compared with control animals (C).

Our results show that treatment with CoQ₁₀ induced a significant increase of AsA and Vit E concentrations in all investigated tissues. The concentration of CoQ was significantly increased only in the liver of rats treated with CoQ₁₀. It is well known that CoQ₁₀ in its reduced form (CoQ₁₀H₂) is the powerful antioxidant which regenerate the active form of Vit E from the Vit E radicals (tocopheroxyl radicals, Vit E[•]), (4), stabilized extracellular ascorbate by its NADPH-CoQ₁₀ reductase (3) and elevate the endogenous CoQ pool in the cells (1). At the other hand, dose and time dependent studies were shown that CoQ concentration after parenteral administration was increased only in the plasma and liver of rats (5).

It can be concluded that all obtained effects induced by CoQ₁₀ led to the elevated concentrations of non-enzymatic components of antioxidant defense system and increased antioxidant protection of all examined tissues.

1. Beyer RE. An analysis of the role of Coenzyme Q in free radical generation and as antioxidant. *Biochem Cell Biol* 70: 390-403, 1991.
2. Ernster L and Dallner G. Biochemical, physiological and medical aspects of ubiquinone function. *Biochem Biophys Acta* 1271: 195-204, 1995.
3. Gomez-Diaz C, Rodriguez-Aguilera JC, Barroso MP, Villalba JM, Navarro F, Crane FL, and Navas P. Antioxidant ascorbate is stabilized by NADH-coenzyme Q₁₀ reductase in the plasma membrane. *J Bioenerg Biomembr* 29:251-257, 1997.
4. Lenaz G, Bovina C, Formigini G and Parenti-Castelli G. Mitochondria, oxidative stress, and antioxidant defences. *Acta Biochem Pol* 46: 1-21, 1999.
5. Scalori V, Alessandri MG, Giovannini L and Barteli A. Plasma and tissue concentrations of Coenzyme Q₁₀ in the rat after intravenous, oral and topical administration. *Int J Tiss Reac* 3: 149-154, 1986.

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