

# Abstract

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## **Oxidative stress status in liver mitochondria and lymphocyte DNA damage of atherosclerotic rabbits supplemented with water soluble coenzyme Q10.**

Ramirez-Tortosa MC, Granados S, Ramirez-Tortosa CL, Ochoa JJ, Camacho P, García-Valdés L, Battino M, Quiles JL.

Department of Biochemistry and Molecular Biology II, Institute of Nutrition and Food Technology (INYTEA), University of Granada, Granada, Spain.

**OBJECTIVE AND METHODS:** The effects of the administration of water soluble coenzyme Q10 (25 mg/kg per day) over 30 days, after 50 days feeding on a high-fat diet (3% lard + 1.3% cholesterol), were investigated in the plasma and liver mitochondria of rabbits.

**RESULTS:** Results showed that this atherogenic diet enhanced lipid levels both in plasma and liver mitochondria, reduced plasma and mitochondrial concentrations of retinol and coenzyme Q10, led to higher DNA damage in peripheral blood lymphocytes and reactive oxygen species concentration in liver mitochondria. The treatment of animals with coenzyme Q10 reduced (to the healthy group levels) lipid concentration in liver mitochondria with no effect on plasma lipids, increased mitochondrial levels of alpha-tocopherol, restored mitochondrial coenzyme Q10 and improved alpha-tocopherol levels in plasma. Moreover, coenzyme Q10 supplementation reduced mitochondrial reactive oxygen species levels and decreased DNA damage in peripheral blood lymphocytes.

**CONCLUSIONS:** The findings suggest that antioxidant therapy with coenzyme Q10 may be used in the treatment of liver pathologies associated to the intake of high-fat, atherogenic, diets.

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