

Abstract

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Hepatoprotective effect of coenzyme Q10 in rats with acetaminophen toxicity.

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OBJECTIVE: The potential protective effect of coenzyme Q10 against acute liver injury induced by a single dose of acetaminophen (700 mg/kg, p.o.) was investigated in rats.

METHODS: Coenzyme Q10 treatment was given as two i.p. injections, 10 mg/kg each, at 1 and 12 h following acetaminophen administration.

RESULTS: Coenzyme Q10 significantly reduced the levels of serum aminotransferases, suppressed lipid peroxidation, prevented the decreases of reduced glutathione and catalase activity, decreased the elevations of tumor necrosis factor- α and nitric oxide as well as attenuating the reductions of selenium and zinc ions in liver tissue resulting from acetaminophen administration. Histopathological liver tissue damage mediated by acetaminophen was ameliorated by coenzyme Q10. Immunohistochemical analysis revealed that coenzyme Q10 significantly decreased the acetaminophen-induced overexpression of inducible nitric oxide synthase, nuclear factor- κ B, caspase-3 and p53 in liver tissue.

CONCLUSION: It was concluded that coenzyme Q10 protects rat liver against acute acetaminophen hepatotoxicity, most probably through its antioxidant, anti-inflammatory and antiapoptotic effects

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