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Brief Communication

# Protective Effect of Dehydroepiandrosterone Against Copper-Induced Lipid Peroxidation in the Rat

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## Abstract

This study investigates the effectiveness and multitargeted activity of dehydroepiandrosterone (DHEA) as antioxidant *in vivo*. A single dose of DHEA was given IP to male rats. Liver and brain microsomes, and plasma low density lipoprotein (LDL), were isolated from rats sacrificed 17 h later. Liver and brain microsomes were challenged with CuSO<sub>4</sub> and, as index of lipid peroxidation, the production of thiobarbituric acid reactive substances (TBARS) was measured. Also, plasma low-density lipoprotein (LDL) were challenged with copper and the time course of lipid peroxidation was evaluated following the formation of conjugated dienes. The onset of TBARS generation induced by copper was markedly delayed in both liver and brain microsomes from DHEA-treated animals. Also, the resistance of LDL to oxidation, expressed by the duration of the lag-phase of the kinetic curve, was significantly enhanced in DHEA-treated rats. Results

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indicate that in vivo DHEA supplementation makes subcellular fractions isolated from different tissues and plasma constituents (LDL) more resistant to lipid peroxidation triggered by copper. The antioxidant effect on plasma LDL might be of special relevance to the proposed antiatherogenic activity of DHEA. Moreover, multitargeted antioxidant activity of DHEA might protect tissues from oxygen radicals damage. © 1997 Elsevier Science Inc.

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## Keywords

Dehydroepiandrosterone; Lipid peroxidation; LDL; Rat

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