

Mechanisms of lindane-induced hepatotoxicity: Alterations of respiratory activity and sinusoidal glutathione efflux in the isolated perfused rat liver

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1. Lindane (25-60 mg/kg) at 24 h after dosage induced a dose-dependent increase in oxygen consumption by perfused rat livers, an effect not observed at early times (2-6 h) after administration. About 60% of the increase in liver oxygen uptake is suppressed by the antioxidant, desferrioxamine, indicating enhanced free radical activity induced by the insecticide. 2. The hepatic content of total GSH equivalents (GSH + 2GSSG) decreased 4 h after lindane treatment (60 mg/kg), together with significant diminution in net and fractional rates of sinusoidal GSH efflux, that returned to control values 24 h after treatment. 3. These data indicate that lindane resulted in marked changes in hepatic oxidative capacity and glutathione metabolism, which condition the production of oxidative stress in the liver at different times of intoxication. © 1991 Informa UK Ltd All rights reserved: reproduction in whole or part not permitted.