Lindane?induced liver oxidative stress: Respiratory alterations and the effect of desferrioxamine in the isolated perfused rat liver

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The effects of lindane administration (25?60 mg kg?1 for 24 h) on hepatic oxygen consumption were studied in the isolated perfused rat liver, in the absence and presence of the iron?chelator free?radical scavenger desferrioxamine. Lindane elicits a dose?dependent enhancement of total oxygen uptake by the liver, which is largely inhibited by 0·55 mM desferrioxamine. Total desferrioxamine? sensitive oxygen consumption exhibits a maximal increase (213 per cent) at 60 mg of lindane kg?1 over control values and represents 21 per cent of the total oxygen consumption. At the different doses of lindane used, it was calculated that about 60 per cent of the total increase in oxygen uptake by the liver is accounted for by oxygen related to oxidative stress, probably utilized at different stages of the induced lipid peroxidative process.