

Modulation of peroxisomal and microsomal fatty acid oxidation by acetone. A comparative study between liver and kidney

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The effect of acetone consumption on some microsomal and peroxisomal activities was studied in rat kidney and these results were compared with data from former investigations in liver. Acetone increased the microsomal lauric acid hydroxylation, the aminopyrine N-demethylation catalyzed by cytochrome P450 and the microsomal UDP-glucuronyltransferase activity. Also, acetone increased the peroxisomal β -oxidation of palmitoyl CoA and catalase activities in kidney. These studies suggest that acetone is a common inducer of the microsomal and peroxisomal fatty acid oxidation, as previously shown in both starved and ethanol treated rats. Our results support the hypothesis that microsomal fatty acid β -hydroxylation results in the generation of substrates being supplied for peroxisomal β -oxidation. We propose that the final purpose of these linked fatty acid oxidations could be the catabolism of fatty acids or the generation of a substrate for the synthesis of glucose from fatty acids. This path