

Modulation of rat liver cytochrome P450 activity by prolonged red wine consumption

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Cytochrome P450-dependent oxidation of lauric acid, p-nitrophenol and ethanol by liver microsomal fractions were studied in control rats and in animals given either ethanol, red wine, or alcohol-free red wine for 10 weeks. Ethanol increased the total cytochrome P450 and the isoenzyme 2E1 content, as well as the p-nitrophenol hydroxylation and ethanol oxidation. These effects of ethanol treatment were attenuated by red wine administration. Red wine increased the total antioxidant capacity of plasma, whereas the alcohol-free red wine decreased the cytochrome P450 content and decreased the oxidation of lauric acid, p-nitrophenol and ethanol to values lower than control. It is concluded that red wine administration attenuates the ethanol-induced enhancement in liver microsomal parameters dependent on cytochrome P450 2E1 activity, an affect that seems to be accomplished by the non-alcoholic constituents of red wine known to have antioxidant properties. ©

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