Effect of barakol on Cytochrome P450 , UDP-glucuronyltransferase and Glutathione S-transferase in isolated rat hepatocytes

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Abstract

Effect of barakol in various concentration(0.025,0.05,0.075,0.10 and 0.15mM)was studied directly in isolated rat hepatocytes by determining the activities of phase I enzyme,aminopyrine N-demethylase (CYP2B,2C) and phase II enzymes including UDP-glucuronyltransferase and glutathione S-transferase. The release of cellular transaminase (ALT,AST) , the reduced glutathione (GSH) content and lipid peroxidation (as malondialdehyde (MDA) formation) were also measured as the cytotoxic criteria. Results indicated that barakol in all concentrations studied, increased the activities of aminopyrine N-demethylase and glutathione S-transferase with the reduction in UDP-glucuronyltransferase activity. Increase in the release of ALT,AST and GSH content were found only with high concentrations of barakol (0.10 and 0.15 mM). There was no change in MDA formation. In conclusion, cytotoxicity induced by high concentrations of barakol may involve the activities of phase I and phase II enzymes but not the lipid peroxidation.

Keywords : barakol , Cytochrome P450 , UDP-glucuronyltransferase , glutathione S-transferase