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EFFECT OF BETAINE OR TAURINE PRETREATMENT ON LIPOPOLYSACCHARIDE-INDUCED HEPATOTOXICITY IN RATS

Sang K. Kim, Young S. Jung, Yu R. Chae, and Young C. Kim

College of Pharmacy, Seoul National University, Seoul 151-742, Korea

The effects of betaine or taurine on hepatotoxicity induced by lipopolysaccharide (LPS) were examined in adult male SD rats. Rats were provided with drinking water containing either 1 % betaine or taurine for 2 weeks prior to challenge with LPS (5 mg/kg, iv). Supplement of betaine or taurine protected the animals from induction of LPS hepatotoxicity as measured by changes in aspartate aminotransferase (AST), alanine aminotransferase (ALT) activities and total bilirubin levels in serum, and hepatic glutathione contents. LPS challenge increased serum TNF-alpha and nitrate/nitrite in rats, which were reduced by betaine or taurine intake. Taurine depletion induced by supply of drinking water containing 3 % beta-alanine for 7 days did not enhance the LPS-induced hepatic damage or the decrease in hepatic glutathione level. The results indicate that intake of betaine or taurine attenuates the LPS-induced hepatotoxicity resulting from activation of Kupffer cells.