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NANTAKA KONGSTAN : EFFECT OF *PHYLLANTHUS AMARUS* ON HEPATOTOXICITY INDUCED BY GALACTOSAMINE IN RATS. THESIS ADVISORS: KANDA ROMRUEN, Dr. Sc. Agr, PUNYA TEMCHAROEN, D.V.M. M.S., AIMON SOMANABANDHD, Ph.D., LAKKANA HIMAKOUN, M.S., WEENA JIRATCHARIYAKUL, Ph.D. 146 p. ISBN 974-665-060-2

*Phyllanthus amarus* (PA) is a weed herb, widely distributed in tropical and warm areas such as India, Pakistan, China, Cuba and South America, including Thailand. PA is a popular medicinal herb used to treat liver diseases. Studies of the protective effects of PA on hepatotoxicity induced by toxic substances and its scientific data are few. Objectives were to investgate the effect of PA on hepatotoxicity induced by galactosamine (GalN) and on hepatic drug metabolizing enzymes in rats. In this study, we investigated the effect of *Phyllanthus amarus* (PA) on growth, nutrition status and some possible toxicity effect in rats, treated with various doses of PA (2.5, 5.0, 10.0 g dried weight/kg b.w.) for 28 days. The result showed that PA did not affect growth, food consumption and did not cause any toxic effect. The plasma levels of glutamic oxaloacetic transminase (GOT), glutamic pyruvic transminase (GPT), alkaline phosphatase (AP), total protein, cholesterol, triglyceride and glucose were within normal limits. Inhibition by PA of hepatotoxicity induced by GalN was observed at the doses of 2.5, 5.0, 10.0 g dried weight/kg b.w. for 28 days before the administration of GalN (400 mg/kg b.w.). Twenty four hour after administration, PA reduced hepatotoxicity by lowering enzymes GOT and GPT about 64-76%. PA showed dose-dependence for hepatoprotective effects in rats. Histopathologically, there was a decrease in the number of necrotic hepatocytes and inflammatory cell infiltration in the PA-treated group, compared with the GalN-treated group. A study of the effect of the ethanolic extract of *Phyllanthus amarus* on hepatic microsomal drug metabolizing enzymes in Spraque-Dawley male rats was also carried out. After administration of various doses of PA (2.5, 5.0, 10.0 g dried weight/kg b.w.) for 28 days, there were no significant differences on aniline hydroxylase and UDP-glucuronyltransferase activity compared with the control group. PA also did not induce or inhibit cytochrome P 450 2E1 activity and glucorunidation.

We conclude that PA demonstrates a reduction in of hepatotoxicity induced by GalN and has no toxic effect in rats. Moreover, it was also shown that PA does not interfere with cytochrome P 450 2E1 activity and glucorunidation.