Thesis Title Effects of Aloe vera on carbon tetrachloride (CCl_4)-induced hepatotoxicity in rats

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ABSTRACT

At first, the effect on growth, nutritional status and some possible toxicities of Aloe vera gel was investigated in rats after administration for 28 days. The results obtained from body weight and body weight gain per day measurement, all employed-doses of Aloe vera gel (1, 5, 10 and 20 ml/kg) did not affect normal growth of rats when comparison to the control group. The effect of Aloe vera gel on nutritional status was revealed that the average value of food intake per day was not difference inbetween the Aloe vera dosed groups and in comparison to the control group. However, by measuring some nutrients in blood, the Aloe vera gel at the dose of 20 ml/kg bw, administration for 28 days, could significantly decreased ($P<0.05$) plasma glucose in rats. From the basic hematologic analysis, Aloe vera gel of all doses did not altered the level, component and morphology of all types of blood cell. They were also

unable to changing neither the plasma level of GOT and GPT, BUN level nor normal histology of rats liver. This evidence ensure that the Aloe vera gel at the dose up to 20 ml/kg could be accepted in its safety in rats when given for 28 days.

Later, the possibility in resistance to carbon tetrachloride-induced hepatotoxicity in rats was studied. From the observation, the Aloe vera gel, either administration for 7 or 28 days, could insignificantly decrease the liver enzymes in plasma (GOT, GPT). In viewed of histopathologic study, the 28 days-administered Aloe vera gel exhibited the lower toxic distribution to periportal zone than the 7 days-administered one. The third degree of damaged hepatocytes had not been observed in the longer period of study (28 days) but this degree in the shorter one (7 days) was still observable. In support with the first study, Aloe vera gel administered for 28 days prior to challanging with CCl_4 was able to lower plasma glucose to the significant level ($P<0.05$) while the other given period (administered for 7 days before toxic induction) has insignificant hypoglycemic effect.

The various possibilities have been discussed to investigate the lowering plasma glucose effect and protective effect in hepatotoxicity-induced by carbon tetrachloride of the Aloe vera gel.