CHAPTER IV

CONCLUSIONS

1. The hypoglycemic effect of crude water extract from *Coscinium fenestratum* (CE) in normal male Wistar rats.

1.1 Single-doses of CE in the oral glucose tolerance test (OGTT).

Oral single-doses of CE at 0.1,0.25,0.5, 0.75 and 1 g/kg body weight can significantly decrease blood glucose concentration at 30 min after 1g/kg body weight glucose feeding. Percentage decrease was 10.40, 10.97, 10.80, 11.57 and 14.75, respectively as compared to the control group.

1.2 Repeated-doses of CE in normal male Wistar rats.

Oral repeated-dose of CE at 1 g/kg body weight/day showed no significant difference in blood glucose concentration on day 7 and day 14 as compared to the control group. No significant difference in blood chemistry and hematology values between CE-treated and control group were shown. Non-remarkable lesions on histopathological findings of liver, exocrine pancreas and pancreatic islets were observed.

2. The hypoglycemic effect of CE in diabetic male Wistar rats.

2.1 Single-doses of CE in diabetic male Wistar rats on non-fasting blood glucose concentration.

Oral single-dose of CE in diabetic rats at 1g/kg body weight exhibited significant hypoglycemic effect at 2 and 3 hr after CE feeding. Standard group showed significantly reduced blood glucose concentration after 1 hr of insulin injection and stable throughout the experiment as compared to the control group. Percentage decrease was 43.68 and 48.77 of standard and 1.25 and 1.17 times of control group.

2.2 Repeated-doses of CE in diabetic male Wistar rats.

Fasting blood glucose concentrations in rats fed oral repeated-dose of CE at 0.1, 0.5 and 1 g/kg body weight/day showed significant difference on day 7 and day 14 as compared to control group. Serum enzymes of AST, ALT and ALP of CE-treated groups were significant lower than the control group. Low cholesterol and triglyceride levels were observed in CE-treated groups. At 1 g/kg body weight/day, CE can significantly decrease serum cholesterol and triglyceride when compared to the control group. A maximum reduction of cholesterol and triglyceride are 68.57% and 62.22%. BUN level of CE-treated groups were not different from control groups. Serum creatinine after 1 g/kg body weight/day CE feeding for 14 days was significantly higher than control group that may predict an impairment of the renal function. No significant difference of Complete Blood Counts (CBC) between CE-treated and control group were observed, except for neutrophils and lymphocytes. That may imply an exhausted immune system and active body defensive mechanism. From the result, most of the experimental groups showed no remarkable lesions on histopathological findings of liver, exocrine pancreas and pancreatic islets.

The result confirms that CE supplementation to diabetic rats has an advantage over control rats (distilled water) in reducing hyperglycemia and hyperlipidemia which are the direct consequences of diabetes.

3. The acute toxicity and LD_{50} determination tested.

High oral single-doses of CE did not induce a sign of acute toxicity within 1-4 hr after fed. Blood chemistry and Hematology values were not different, except for the percentage of lymphocyte of group 3 was significantly different ($p<0.05$) when for the compared to the control group which may indicate an exhausted immune system. Non-remarkable lesions on histopathology microscopic finding of liver, exocrine pancreas and pancreatic islets were observed. No number of rats died within 24 hr and throughout the experiment.