ANTIDIABETIC ACTIVITY OF KERSEN (*Muntingia calabura* L.) LEAVES WATER EXTRACT IN DIABETIC ANIMAL MODELS

Widhya Aligita 1*, Elis Susilawati 1, Ika Kurnia Sukmawati 1, Lusi Holidayanti 1, Jejen Riswanto 1

1Department of Pharmacology, Bandung School of Pharmacy, Bandung, Indonesia
w.aligita@gmail.com / widhya.aligita@stfb.ac.id

ABSTRACT

Diabetes Mellitus is a heterogeneous group of disorders characterized by increasing blood glucose levels caused by lack of insulin hormone. There are significant increasing in diabetes case every year in Indonesia, consequently alternative and better drug is needed to be developed. One of the plants that were often used as traditional medicine for diabetes in Indonesia was kersen (*Muntingia carabula* L.) leaf. The aim of this research was to evaluate the antidiabetes activity of kersen (*Muntingia carabula* L.) leaves. The study was devided into two animal model groups: the first was insulin deficiency animal model developed by aloxan administration at dose of 50 mg/kg bw intravenously; the second was insulin resistance animal model developed by lipid emulsion administration at dose of 0.42 mL/20 g bw orally. Both groups was administered with the standard drug (glibenclamide and metformin) or extract at dose of 100, 200, and 400 mg/kg bw orally for 14 days. The result showed that the extract group had lower blood glucose level in insulin deficiency animal model and higher insulin sensitivity in insulin resistance animal model compared to positive control group, significantly. The conclusion was *Muntingia carabula* L. leaves water extract with dose of 400 mg/kg bw had the antidiabetic activity with mechanisms to increase insulin secretion, regenerate pancreatic β cells, and increase insulin sensitivity.

**Key words:** Diabetes mellitus; kersen leaves; *Muntingia calabura* L.; insulin deficiency; insulin resistance