

ABSTRAK

DESTIANTI, F. 27216537A UJI AKTIVITAS ANTIHIPERGLIKEMI EKSTRAK ETANOL DAUN CABE JAWA (*Piper retrofractum* Vahl) DAN HISTOPATOLOGI PANKREAS PADA MENCIT PUTIH JANTAN (*Mus musculus*) DENGAN INDUKSI ALOKSAN. Dibimbing oleh Dr. apt. Wiwin Herdwiani, M.Sc dan apt. Jamilah Sarimanah, M.Si

Diabetes melitus merupakan penyakit metabolik yang menyebabkan hiperglikemi. Cabe jawa (*Piper retrofractum* Vahl) mengandung flavonoid, alkaloid, tanin dan saponin yang berkhasiat sebagai penurun kadar gula darah. Tujuan penelitian ini untuk mengetahui aktivitas dan dosis efektif antihiperglikemi ekstrak daun cabe jawa, serta mengetahui kemampuan memperbaiki histopatologi pankreas pada mencit jantan yang telah diinduksi aloksan.

Penelitian ini dimulai dengan membuat ekstrak daun cabe jawa menggunakan metode maserasi dengan pelarut etanol 70%. Hewan uji yang digunakan adalah Mencit putih jantan *Mus musculus* sebanyak 30 ekor. Mencit dipuasakan selama 12 jam dan dihitung kadar gula darah awal(T0) kemudian diinduksi aloksan dan setelah 3 hari diukur kadar gula darah (T1). Mencit diberikan perlakuan kecuali kontrol normal. Pada mencit kontrol negatif diberikan Na CMC, kontrol positif glibenklamid, dosis perlakuan ekstrak 1,4, 2,8, dan 5,6 mg/kgBB mencit. Pengukuran kadar gula darah diukur dengan *glucometer easy test*, lalu mencit dikorbankan dan diambil pankreasnya untuk diuji histopatologi. Data diuji menggunakan *One Way Anova* dan *Paired T-test*.

Hasil penelitian menunjukkan bahwa seluruh ekstrak daun cabe jawa dapat menurunkan kadar gula darah dan menurunkan persentase nekrosis dengan signifikan (Sig. <0,05). Dosis terapi anti hiperglikemi yang efektif dalam penelitian ini adalah 1,4 mg/KgBB mencit, sedangkan sebagai agen anti-nekrosis ekstrak daun cabe jawa menunjukkan hubungan semakin meningkatnya dosis ekstrak, persentase perlindungan terhadap kerusakan sel semakin baik, dengan dosis efektif 2,8 mg/KgBB mencit. Dari hasil penelitian dapat diketahui bahwa seluruh dosis berpotensi sebagai agen anti-hiperglikemi dengan dosis efektif 1,4 mg/KgBB mencit.

Kata kunci: Aloksan, Anti-hiperglikemi, Daun cabe jawa, Histopatologi

ABSTRACT

DESTIANTI, F. 27216537A TESTING THE ANTIHYPERGLYCEMIC ACTIVITY OF ETHANOLIC EXTRACT OF JAVA CUBE LEAVES (*Piper retrofractum* Vahl) AND PANCREATIC HISTOPATHOLOGY IN MALE WHITE MICE (*Mus musculus*) USING ALLOXAN INDUCTION. guided by Dr. apt. Wiwin Herdwiani, M.Sc dan apt. Jamilah Sarimanah, M.Si

Diabetes mellitus is a metabolic disease that causes hyperglycemia. Javanese chilies (*Piper retrofractum* Vahl) contain flavonoids, alkaloids, tannins and saponins which are effective in lowering blood sugar levels. The aim of this research was to determine the antihyperglycemic activity and effective dose of Javanese chili leaf extract, as well as to determine the ability to improve pancreatic histopathology in male mice that had been induced by alloxan.

This study begins with making Javanese chili leaf extract using maceration method with 70% ethanol solvent. The test animals used were 30 white male *Mus musculus* mice. Mice were fed for 12 hours and calculated the initial blood sugar level (T0) then induced alloxan and after 3 days measured blood sugar levels (T1). Mice were given treatment except normal control. Negative control mice were given Na CMC, positive control glibenclamide, treatment dose of extract 1.4, 2.8, and 5.6 mg/kgBB mice. Measurement of blood sugar levels was measured with an easy test glucometer, then the mice were sacrificed and the pancreas was taken to be tested for histopathology. The results were analyzed using One Way Anova and Paired T-test.

The research results showed that all Javanese chili leaf extracts could reduce blood sugar levels and reduce the percentage of necrosis significantly (Sig. <0.05). The effective anti-hyperglycemic therapeutic dose in this study was 1.4 mg/KgBW of mice, while as an anti-necrosis agent Javanese chili leaf extract showed a relationship between increasing the extract dose, the better the percentage of protection against cell damage, with an effective dose of 2.8 mg /KgBB mice. From the research results, it can be seen that all doses have the potential to act as anti-hyperglycemic agents with an effective dose of 1.4 mg/KgBB for mice.

Key words: Alloxan, Anti-hyperglycemia, Javanese chili leaves, Histopathology