

**FAKULTAS KEDOKTERAN**

**UNIVERSITAS PEMBANGUNAN NASIONAL “VETERAN” JAKARTA**

**Skripsi, Januari 2025**

**YASMIN KHAILA MARSHANDA, No. NRP 2110211015**

**PENGARUH EKSTRAK DAUN UBI JALAR UNGU (*IPOMOEA BATATAS L*) TERHADAP PERBAIKAN HISTOPATOLOGI GINJAL TIKUS WISTAR MODEL DIABETIK**

RINCIAN HALAMAN (xix + 82 halaman, 13 tabel, 12 gambar, 8 lampiran)

### **ABSTRAK**

#### **Tujuan**

Hiperglikemia kronis pada Diabetes Melitus (DM) menyebabkan penumpukan radikal bebas yang dapat merusak ginjal sehingga terjadi kerusakan ginjal stadium akhir dengan tingkat mortalitas dan morbiditas yang tinggi. Terapi alternatif menggunakan ekstrak daun ubi jalar ungu (*Ipomoea batatas L*) yang mengandung antioksidan flavonoid, saponin dan polifenol yang mampu mengurangi kerusakan ginjal akibat radikal bebas pada diabetes melitus. Tujuan penelitian ini adalah mengetahui pengaruh ekstrak daun ubi jalar ungu (EDUJU) terhadap perbaikan histopatologi ginjal pada tikus putih (*Rattus norvegicus*) galur wistar model diabetik.

#### **Metode**

Desain penelitian adalah eksperimen murni menggunakan *posttest only control group design*. Sampel tikus Wistar 30 ekor, berat 200-300 gram, dan usia 2-3 bulan diambil secara *simple random sampling*. Tikus dikelompokkan menjadi K1 (pakan standar, aquades), K2 (aloksan), K3 (aloksan, simvastatin), dan P1, P2, P3 {aloksan, EDUJU dosis 150, 300, dan 600 (mg/kgBB)} dengan pemberian pakan tinggi lemak kecuali pada kelompok K1 dan perlakuan selama 18 hari. Tikus dianestesi dengan Ketamine Xylazine, dibedah dan dilakukan pengambilan ginjal kemudian pembuatan preparat ginjal menggunakan pewarnaan HE.

#### **Hasil**

Hasil uji Kruskal Wallis menunjukkan terdapat pengaruh EDUJU terhadap perbaikan histopatologi ginjal tikus Wistar model diabetik ( $p=0.038$ ). Uji Post-Hoc

Mann Whitney pemberian EDUJU dosis 600 mg/kgBB hampir sama dengan simvastatin ( $p=0.475$ ).

### **Kesimpulan**

Berdasarkan hasil penelitian didapatkan ekstrak daun ubi jalar ungu dapat memperbaiki kerusakan histopatologi ginjal akibat DM.

**Daftar Pustaka** : 69 (2015-2024)

**Kata Kunci** : Antioksidan, Diabetes Melitus, Ekstrak Daun Ubi Jalar Ungu, Histopatologi Ginjal, Radikal Bebas

**FACULTY OF MEDICINE**

**UNIVERSITY PEMBANGUNAN NASIONAL “VETERAN” JAKARTA**

**Undergraduate Thesis, January 2025**

**YASMIN KHAILA MARSHANDA, No. NRP 2110211015**

**EFFECT OF PURPLE SWEET POTATO (*IPOMOEA BATATAS* L) LEAF EXTRACT ON KIDNEY HISTOPATHOLOGY IMPROVEMENT OF DIABETIC WISTAR RAT MODEL**

PAGE DETAIL (xix + 82 pages, 13 tables, 12 pictures, 8 appendices)

**ABSTRACT**

**Objective**

Hyperglycemia in diabetes mellitus can cause end-stage renal disease with high mortality and morbidity rates. Alternative therapy using purple sweet potato leaf extract (*Ipomoea batatas* L) contains antioxidants flavonoids, tannins, saponins and polyphenols able to reduce kidney damage due to diabetes mellitus by reducing buildup free radicals. The aim of this research is to determine the effect of purple sweet potato leaf extract (PSPLE) on improving kidney histopathology in white rat (*Rattus norvegicus*) diabetic model Wistar strain.

**Method**

The research design is pure experimental use *posttest only control group design*. Samples of 30 Wistar rats, weighing 200-300 grams, and aged 2-3 months were taken randomly. *simple random sampling*. The rats were divided into the following groups: K1 (standard feed and distilled water), K2 (alloxan), K3 (alloxan and simvastatin), and P1, P2, P3 {alloxan and EDUJU at doses of 150, 300, and 600 mg/kgBW}, with all groups except K1 receiving a high-fat diet. The treatments were administered over a period of 18 days. The rats were anesthetized using Ketamine-Xylazine, dissected to extract the kidneys, and kidney preparations were made using Hematoxylin-Eosin (HE) staining.

**Result**

The results of the Kruskal Wallis test showed an effect of EDUJU on improving the kidney histopathology of diabetic Wistar rats ( $p=0.038$ ). Post-Hoc Mann Whitney

test giving PSPLE at a dose of 600 mg/kgBW was almost the same as simvastatin (p=0.475).

### **Conclusion**

Based on the result purple sweet potato leaf extract can improve kidney histopathological damage due to diabetes mellitus.

**Reference** : 69 (2015-2024)

**Keywords** : Antioxidant, Diabetes Mellitus, Free Radicals, Kidney Histopathology Purple Sweet Potato Leaf Extract