

## ABSTRAK

Indrawati, Sri. 2014. **Efek Ekstrak Daun Binahong Terhadap Kadar Glukosa Darah dan Glikogen Otot Pada Tikus Wistar DM2**. Tugas Akhir, Program Studi Farmasi Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) Dra. Diana Lyrawati, Apt., M.S., Ph.D. (2) Dra. Siti Jazimah Iswarin, Apt., M.Si.

Diabetes mellitus tipe 2 (DM2) merupakan gangguan metabolik yang ditandai dengan kondisi hiperglikemia akibat resistensi insulin. Penurunan glikogen otot pada DM2 disebabkan oleh penurunan aktivitas insulin. Binahong secara tradisional digunakan sebagai terapi diabetes. Penelitian ini bertujuan mengidentifikasi efek ekstrak daun binahong dalam menurunkan kadar glukosa darah dan meningkatkan kadar glikogen otot tikus DM2. Penelitian menggunakan *True experimental design* dengan sampel tikus putih (*Rattus norvegicus*) wistar jantan sebanyak 30 ekor yang dibagi menjadi enam kelompok perlakuan, yaitu K- (tikus normal), K+ (tikus DM), PA (tikus DM2+ekstrak daun binahong 17,5mg/kgBB/hari), PB (tikus DM2+ekstrak daun binahong 35mg/kgBB/hari), PC (tikus DM+ekstrak daun binahong 70mg/kgBB/hari), dan KP (tikus DM + glimepiride/hari sebagai obat standar antidiabetes). Diet tinggi lemak selama lima minggu dan injeksi dosis tunggal streptozotocin 35mg/kgBB di minggu kelima digunakan untuk induksi DM2. Kadar glukosa darah diukur setelah induksi DM2 dan setelah 15 hari pemberian terapi. Kadar glikogen otot ditentukan secara spektrofotometri. Kadar glukosa darah kelompok PB mencapai target normal (<200mg/dL) setelah terapi 15 hari ( $p=0,043$ ). Kadar glikogen otot pada semua kelompok tidak berbeda secara statistik, kecuali PC lebih tinggi daripada K-, K+, dan KP ( $p=0,014$ ;  $p=0,021$ ;  $p=0,014$ ). Kesimpulan penelitian ini, ekstrak daun binahong mampu menurunkan kadar glukosa darah serta meningkatkan glikogen otot tikus DM2.

Kata kunci: Diabetes mellitus tipe 2, ekstrak daun binahong, glikogen otot

**ABSTRACT**

Indrawati, Sri. 2014. **Effect of Binahong Leaves Extract on Blood Glucose and Muscles Glycogen Levels in Wistar Rats DM2**. Final Assignment, Pharmacy Program, Faculty of Medicine, Brawijaya University. Supervisors: (1) Dra. Diana Lyrawati, Apt., M.S., Ph.D. (2) Dra. Siti Jazimah Iswarin, Apt., M.Si.

Diabetes mellitus type 2 (DM2) is a metabolic disorder marked by hyperglycemic condition caused insulin resistance. The decrease of muscles glycogen in DM2 is caused by reduce insulin activity. Binahong traditionally has been used as diabetic therapy. This study was undertaken to identify the effect of binahong leaves extract on decreasing blood glucose level and increasing muscles glycogen level in rat with DM2. This study used True experimental design with 30 male rats (*Rattus norvegicus*) assigned into six groups, i.e. K- (non-DM2); K+ (DM2); PA (DM2+binahong leaves extract doses 17.5mg/kgbw/day); PB (DM2+binahong leaves extract doses 35mg/kgbw/day); PC (DM+binahong leaves extract doses 70mg/kgbw/day), and KP (DM2+glimperide/day as an antibiadetic standard drug). High fat diet for five weeks and single doses streptozotocin injection 35mg/kgBB in fifth week were used to induced DM2. Blood glucose level was measured after DM2 induction and after fifteen days administration of therapy. Muscles glycogen level was determined spectrophotometrically. Blood glucose level of PB group achieved normal target (<200mg/dL) after fifteen days therapy ( $p=0.043$ ). Muscles glycogen levels in all groups were not different statistically, except PC was higher than K-; K+; and KP ( $p=0.014$ ;  $p=0.021$ ;  $p=0.014$ ). In conclusion binahong leaves extract can decrease blood glucose levels and increase muscles glycogen in rat with DM2.

Keywords: Diabetes mellitus type 2, binahong leaves extract, muscles glycogen