

Laily Fauziah, 2015. **Pengaruh Berbagai Fraksi Ekstrak Kulit Buah Manggis (*Garcinia mangostana* L.) dengan Berbagai Pelarut terhadap Kadar Glukosa Darah Puasa dan Berat Badan Mencit (*Mus musculus*) Diabetik**, dibawah bimbingan Drs. H. Saikhu Akhmad Husen, M.Kes. dan Dr. Dwi Winarni, M.Si., Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

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### ABSTRAK

Penelitian ini bertujuan mengetahui pengaruh pemberian berbagai fraksi ekstrak kulit buah manggis terhadap kadar glukosa darah puasa dan penambahan berat badan mencit diabetik. Penelitian ini menggunakan 30 ekor mencit (*Mus musculus*) jantan dewasa strain BALB/c, umur 3-4 bulan, berat badan 20-30 g. Hewan coba dibagi dalam kelompok kontrol dan kelompok perlakuan. Kelompok kontrol dibagi menjadi 3 subkelompok yaitu kelompok kontrol normal (KN), kelompok kontrol diabetik (KD) dan kelompok kontrol metformin (KM). Kelompok perlakuan dibagi menjadi 3 subkelompok yaitu kelompok fraksi nonpolar (NP), semipolar (SP), dan polar (P). Kadar glukosa darah puasa diukur pada hari pertama setelah perlakuan dan di akhir perlakuan. Pertambahan berat badan merupakan selisih berat badan yang diukur hari ke-14 setelah perlakuan dengan berat badan awal perlakuan. Hasil uji *Kruskal-Wallis* ( $\alpha=0,05$ ) yang dilanjutkan dengan uji *Mann-Whitney* ( $\alpha=0,05$ ) pada data kadar glukosa darah puasa menunjukkan bahwa pemberian berbagai fraksi ekstrak kulit buah manggis (*Garcinia mangostana* L.) berpengaruh terhadap kadar glukosa darah puasa mencit (*Mus musculus*) diabetik, dimana terjadi penurunan kadar glukosa darah puasa secara signifikan pada kelompok yang diberi fraksi polar dosis 50 mg/kg berat badan. Fraksi nonpolar dengan dosis 18 mg/kg berat badan mampu mempertahankan kadar glukosa darah puasa agar tidak meningkat. Hasil uji t independen ( $\alpha=0,05$ ) pada data pertambahan berat badan menunjukkan bahwa pemberian berbagai fraksi ekstrak kulit buah manggis (*Garcinia mangostana* L.) berpengaruh terhadap kadar glukosa darah puasa mencit (*Mus musculus*) diabetik, dimana terjadi pertambahan berat badan secara signifikan pada kelompok yang diberi fraksi semipolar dan nonpolar dengan dosis masing-masing 80 dan 18 mg/kg berat badan.

**Kata kunci:** *Garcinia mangostana* L., kadar glukosa darah puasa, penambahan berat badan.

Laily Fauziah, 2015. **The Effect of Various Fraction of Mangosteen (*Garcinia mangostana* L.) Pericarp Extract on Fasting Blood Glucose Level and Body Weight Gain of Diabetic Mice (*Mus musculus*)**, under the guidance of Drs. H. Saikhu Akhmad Husen, M.Kes. and Dr. Dwi Winarni, M.Si., Departement of Biology, Faculty of Science and Technology. Airlangga University, Surabaya.

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### ABSTRACT

The objectives of this study were to determine the effect of various fractions of mangosteen pericarp extract on fasting blood glucose level and body weight gain of diabetic mice. This study used 30 mice (*Mus musculus*) strain adult male BALB/c, aged 3-4 months, 20-30 g. They were divided into control and treatment groups. Control groups were divided into 3 subgroups. They were subgroups normal (KN), diabetic (KD), and metformin (KM). Treatment groups were divided into subgroups of nonpolar fraction (NP), semipolar fraction (SP), and polar fraction (P). Fasting blood glucose level were measured at first day and the end of treatment. Body weight gain is the difference of the measured body weight day 14 after treatment with first body weight treatment. The result of *Kruskal-Wallis* ( $\alpha=0.05$ ) followed by *Mann-Whitney* ( $\alpha=0.05$ ) in fasting blood glucose level data showed various fraction of mangosteen (*Garcinia mangostana*, L.) pericarp extract influenced to glucose level of diabetic mice (*Mus musculus*), as there are significant decreases in fasting blood glucose level in the groups that were treated by polar fractions with dose 50 mg/kg body weight. Nonpolar fraction with dose 18 mg/kg body weight is able to keep fasting blood glucose level staying in normal level. The result of t independent test ( $\alpha = 0.05$ ) on body weight gain data showed various fraction of mangosteen (*Garcinia mangostana*, L.) pericarp extract influenced to body weight gain of diabetic mice (*Mus musculus*), as there are significant decreases in fasting blood glucose level in the groups that were treated by semipolar and nonpolar fractions with each dose 80 and 18 mg/kg body weight.

**Keywords:** *Garcinia mangostana* L., fasting blood glucose level, body weight gain.