R. Joko Kuncoro. N.S. 2016. Pengaruh Ekstrak Kulit Buah Manggis (*Garcinia mangostana* L.) Terhadap Kadar SGOT dan SGPT serta Gambaran Struktur Hepar Mencit Diabetik. Skripsi ini dibawah bimbingan Drs. H. Saikhu Akhmad Husen, M.Kes. dan Dr. Dwi Winarni, M.Si. Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga. Surabaya

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian ekstrak kulit buah manggis (*Garcinia mangostana* L.) terhadap kerusakan jaringan hepar dan penurunan kadar SGOT dan SGPT serum mencit diabetik. Hewan coba yang digunakan sebanyak 24 ekor mencit (*Mus musculus*) jantan galur Balb/c, umur 3-4 bulan dikelompokkan menjadi 6 kelompok perlakuan, masing-masing kelompok terdiri atas 4 ekor. Kelompok kontrol normal (KN) yang hanya diberi air, kelompok kontrol diabetik (KD) yang diinjeksi *streptozocin* (STZ) 5 hari berturut-turut, kelompok kontrol metformin (KM), kelompok perlakuan 1 (P1) pemberian ekstrak kulit buah manggis 200 mg/kg BB, kelompok perlakuan (P2) pemberian ekstrak kulit buah manggis 100 mg/kg BB, dan kelompok perlakuan 3 (P3) pemberian ekstrak kulit buah manggis 50 mg/kg BB. Pemberian ekstrak dilakukan selama 14 hari secara *per-oral*. Hewan percobaan pada setiap kelompok dieutanasi untuk pengambilan darah *intracardiac*, pembedahan dan pengambilan organ hepar untuk diamati histologi kerusakannya. Pengukuran kadar SGOT dan SGPT serum menggunakan kit Pentra C.200 *reader* dan pengamatan kerusakan jaringan hepar dilakukan dibawah mikroskop cahaya dengan perbesaran 40x10, pengamatan irisan hepar setiap individu dilakukan pada 3 lapang pandang setiap irisan. Hasil uji *One Way* Anova menunjukkan bahwa pemberian ekstrak kulit buah manggis (*Garcinia mangostana* L.) menurunkan secara signifikan ($p<0,05$) pada kadar enzim SGOT dan SGPT serta kerusakan hidropik dan nekrosis sel hepar. Hasil uji Brown Forsythe menunjukkan adanya penurunan signifikan ($p<0,05$) pemberian ekstrak kulit buah manggis (*Garcinia mangostana* L.) pada pembengkakan sel hepar. Sehingga dapat disimpulkan bahwa pemberian ekstrak kulit buah manggis (*Garcinia mangostana* L.) memperbaiki kerusakan jaringan hepar dan penurunan kadar SGOT dan SGPT serum mencit diabetik.

Kata kunci : kulit buah manggis (*Garcinia mangostana* L.), streptozotocin, eutanasi, intracardiac, SGOT, SGPT, dan histologi hepar

R. Joko Kuncoro. N.S. 2016. The Effect of Mangosteen (*Garcinia mangostana* L.) Peel Extract on SGOT and SGPT Levels and Hepar Structure of Diabetic Mice. This thesis is under the guidance of Drs. H. Saikhu Akhmad Husen, M.Kes and Dr. Dwi Winarni, M.Si. Biology Department. Faculty of Science and Technology. Airlangga University. Surabaya

ABSTRACT

This research was aimed to determine the effect of mangosteen peel (*Garcinia mangostana* L.) crude extract on the destruction of liver tissue and the decrease SGOT and SGPT levels of diabetic mice. Twenty four mice male Balb/C strain, 3-4 month old were divided into 6 groups, and each group contains 4 mice. Normal control group (KN) which was only induced with water, diabetic control group (KD) which was induced by streptozocin (STZ) 5 days continually, metformin control group (KM), treatment group 1 (P1) by dose 200 mg/kg of mangsoteen peel extract, treatment group 2 (P2) by dose 100 mg/kg of mangosteen peel extract, and treatment group 3 (P3) by dose 50 mg/kg of mangosteen peel extract. Mangosteen peel extract was injected for 14 days by per-oral method. Animals in each group were euthanasia injected to get blood samples from intracardiac. After that, liver organ was taken for histological liver injury. The level of SGOT and SGPT serum was measured using Pentra C.200 reader kit and the destruction of liver tissue was measured using a light microscope with a magnification of 40x10, the hepatic samples of each mice was observed in 3 different views for each samples. Anova statistic analysis showed that crude extract of mangosteen peel has decrease significantly ($p<0,05$) on the levels of SGOT and SGPT and hidropic and nekrosis cell injury injury. Brown Forsythe statistic analysis showed the decrease significantly of crude extract of mangosteen peel ($p<0,05$) on swollen cell injury. Thus, it can be concluded that the crude extract of mangosteen peel has regenerate significantly on the destruction of liver tissue and the decrease SGOT and SGPT levels of diabetic mice .

Key words: mangosteen peel (*Garcinia mangostana* L), streptozotocin, euthanasia, intracardiac, SGOT, SGPT, and hepatocyte histology