Raden Joko Kuncoroningrat Susilo, 2018. Efek Hepatoprotektif Ekstrak Ganoderma lucidum Terhadap Kerusakan Oksidatif Hepar Mencit (Mus musculus) Setelah Diinduksi Oleh Karbon Tetraklorida. Tesis ini di bawah bimbingan: Prof Win Darmanto, M.Si, Ph.D dan Dr. Dwi Winarni, M.Si, Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui efek hepatoprotektif pemberian ekstrak kasar polisakarida Ganoderma lucidum terhadap kerusakan jaringan hepar dan penurunan kadar SGOT, SGPT, MDA serta peningkatan kadar SOD dan CAT hepar mencit yang induksi CCl_4. 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 6 ekor. Kelompok kontrol normal (KN) yang hanya diberi pelarut (0,5% CMC), kelompok kontrol positif yang diinduksi silymarin (K+), kelompok kontrol negatif (K-) yang diinjeksi karbon tetraklorida (CCl_4) pada hari ke-8, kelompok perlakuan 1 (P1) pemberian ekstrak Ganoderma lucidum 50 mg/kg BB, kelompok perlakuan (P2) pemberian ekstrak Ganoderma lucidum 100 mg/kg BB, dan kelompok perlakuan 3 (P3) pemberian ekstrak Ganoderma lucidum 200 mg/kg BB. Pemberian ekstrak dilakukan selama 7 hari secara per-oral. Hewan percobaan pada setiap kelompok dieutanasi untuk pengambilan darah intracardiac, pembedahan dan pengambilan organ hepar pada hari ke-9 untuk diamati histologi kerusakannya. Pengukuran kadar SGOT, SGPT, MDA, SOD, dan CAT menggunakan metode ELISA kit 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 statistik menunjukkan bahwa pemberian ekstrak Ganoderma lucidum dapat menurunkan secara signifikan ($p<0,05$) kadar SGOT, SGPT, MDA, persentase sel nekrosis serta meningkatkan secara signifikan kadar SOD dan CAT ($p<0,05$) tetapi tidak menurunkan secara signifikan ($p>0,05$) rerata persentase sel bengkak hidropik. Sehingga dapat disimpulkan bahwa pemberian ekstrak kasar polisakarida Ganoderma lucidum dapat berperan sebagai hepatoprotektor dengan memperbaiki kerusakan gambaran histologi hepar dan menurunkan kadar SGOT, SGPT, MDA serta meningkatkan kadar SOD, CAT pada hepar mencit yang diinduksi oleh CCl_4

Kata kunci: Ganoderma lucidum, ekstrak kasar polisakarida, karbon tetraklorida, hepatoproteksi, mencit

Raden Joko Kuncoroningrat Susilo, 2018. Hepatoprotective Effects of Ganoderma lucidum Extract on Carbon Tetrachloride – induced Oxidative Damage in Liver Mice. Department of Biology, Faculty of Science and Technology, Universitas Airlangga, Surabaya.

ABSTRACT

This research was aimed to determine the hepatoprotective effect of crude polysaccharide extract from Ganoderma lucidum on the destruction of liver tissue and the decrease SGOT, SGPT, MDA levels and the increase SOD and CAT levels mouse liver from CCl_4-induced damage. Twenty four mice male Balb/C strain, 3-4 month old were divided into 6 groups, and each group contains 6 mice. Normal control group (KN) which was only induced with solvent (0,5% CMC), positive control group (K+) which was induced by silymarin, negative control group (K-) which was induced by carbon tetrachloride (CCl_4) on day 8, treatment group 1 (P1) by dose 200 mg/kg of Ganoderma lucidum extract, treatment group 2 (P2) by dose 100 mg/kg of Ganoderma lucidum extract, and treatment group 3 (P3) by dose 50 mg/kg of Ganoderma lucidum extract. Mangosteen peel extract was injected daily for 7 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 on day 9. The level of SGOT,SGPT, MDA, SOD, and CAT was measured using ELISA kit method 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. Statistic analysis showed that Ganoderma lucidum extract has decrease significantly ($p<0,05$) on the levels of SGOT,SGPT, MDA, nekrosis cell injury percentage and it was increase significantly ($p<0,05$) on the levels of SOD nad CAT but the reduction in hidropic swollen cell injury percentage was not significant ($p>0,05$). Thus, it can be concluded that the crude polysaccharide extract of Ganoderma lucidum has role as hepatoprotector might be due to the regeneration of histology liver damage and the decreasing of SGOT, SGPT, MDA levels and via increasing SOD, CAT levels mouse liver from CCl_4-induced damage

Keywords: Ganoderma lucidum, crude polysaccharide extract, carbon tetrachloride, hepatoprotection, mice