

Research article

Hepatoprotective effect of mengkudu (*Morinda citrifolia*) on rats induced by doxorubicin

Rozana, I. Nyoman Ehrich Lister*, Edy Fachrial, Sukirman Lie

Faculty of Medicine, Universitas Prima Indonesia, Medan, Sumatera Utara, Indonesia.

Key words: Hepatoprotective, Mengkudu, AST, ALT.

***Corresponding Author: I. Nyoman Ehrich Lister**, Faculty of Medicine, Universitas Prima Indonesia, Medan, Sumatera Utara, Indonesia.
E-mail: jennysim2904@gmail.com

Vol. 5(2), 01-06, Apr-Jun, 2020.

Abstract

The liver is the largest solid organ, the largest gland and one of the most vital organs that functions as a center for nutrient metabolism and excretion of waste metabolites. In general, the biological effects caused by the use of anthracycline doxorubicin are the occurrence of apoptosis, necrosis, and autophagy. The purpose of this study was to determine the hepatoprotective activity of mengkudu fruit ethanol extract against the rats induced by doxorubicin. Mengkudu fruit ethanol extract was obtained by maceration. Hepatoprotective activity test is done by measuring aspartate transaminase (AST) and alanine transaminase (ALT). Animals were induced with DOX 5 mg/kgbw on day 1, 7, 14 and 20th. Administration of mengkudu extract 100 mg/kgbw, 300 mg/kgbw, and 500 mg/kgbw given from day 1 to day 20 and on the 21st day cardiac serum levels of AST and ALT were determined. Mengkudu dose of 100 mg/kgbw, 300 mg/kgbw and 500 mg/kgbw have hepatoprotective activity against male rats induced by doxorubicin. Mengkudu shows activity as a hepatoprotection. Mengkudu doses of 100, 300 and 500 mg/kgbw can inhibit the increase in ALT and AST activity. Mengkudu dose 100 mg/kgbw with AST 334.33 U/L and ALT 152 U/L, mengkudu dose 300 mg/kgbw with AST 304.33 U/L and ALT 117.33 U/L, and mengkudu dose 500 mg/kgbw with AST 192.67 U/L and ALT 103.67 U/L showed significant differences ($p < 0.05$) against the negative control group. Mengkudu doses of 100, 300, and 500 mg/kgbw can reduce ALT and AST in doxorubicin-induced male rats.