

Research article

Cardioprotective effect of ethanolic extract of mengkudu (*Morinda citrifolia*) on rats induced by doxorubicin

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Abstract

Doxorubicin is an effective drug used in cancer therapy but produces reactive oxygen species (ROS) that are toxic to heart cells. The purpose of this study was to determine the cardioprotective activity of Mengkudu fruit ethanol extract against the heart induced by doxorubicin. Mengkudu fruit ethanol extract was obtained by maceration. Cardioprotective activity test is done by measuring blood LDH and CK-MB levels as well as cardiac histology. Animals were induced with DOX 5 mg/kg BW on day 1,7,14 and 20th. Administration of Mengkudu extract 100 mg / kg bw, 300 mg / kg bw, and 500 mg / kg BW given from day 1 to day 20 and on the 21st day cardiac serum levels of CK-MB normal group had a significant difference ($p < 0.05$) with a negative control treatment group, treatment group I, treatment group II, and treatment group III and did not have a significant difference ($P > 0.05$) with a positive control group with vitamin e supplementation and serum LDH levels the normal group had a significant difference ($p < 0.05$) with the negative control group, the treatment group I, the treatment group II, and the treatment group II and did not have a significant difference ($P > 0.05$) with the positive control group with vitamin e supplementation. Cardiology histology of the Mengkudu extract 100 mg/kg bw + DOX and the Mengkudu extract 300 mg/kg bb + DOX, and the negative control group showed bleeding, fragmentation and myocytolysis, in the treatment of group III, the group normal, and the positive control group did not show heart muscle damage. Based on the description above it can be concluded that the ethanol extract of Mengkudu fruit containing flavonoids has cardioprotective activity by inhibiting the formation of ROS. The higher the dose of an extract, the greater the decrease in LDH and CKMB levels and increase protection against heart damage.
