

Research article

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

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Key words: Nephroprotective, Mengkudu, Urea, Creatinine.

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Vol. 5 (2), 01-07, Apr-Jun, 2020.

Abstract

Chronic kidney disease in the world is currently experiencing an increase and become a serious health problem. Doxorubicin clinical efficacy is hampered by dose-related organotoxic (heart, liver, and kidney) potential. The purpose of this study was to determine the nephroprotective activity of mengkudu fruit ethanol extract against the rats induced by doxorubicin. Mengkudu fruit ethanol extract was obtained by maceration. Nephroprotective activity test is done by measuring urea and creatinine. Animals were induced with doxorubicin (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 blood serum levels of urea and creatinine. Mengkudu dose of 100 mg/kg BW, 300 mg/kgbw and 500 mg/kgbw have nephroprotective activity against male rats induced by doxorubicin. The effective dose of mengkudu as nephroprotective is at a dose of 500 mg/kgbw with a serum creatinine level of 0.570 ± 0.030 mg/dl and a serum urea level of 28.333 ± 6.210 mg/dl which shows a significant difference ($p < 0.05$) of negative controls and not significantly different ($p > 0.05$) from positive control (Vitamin E). In the positive control group and the administration of mengkudu 500 mg/kgbw, the kidney tissue appeared normal. In the treatment group, mengkudu 500 mg/kgbw did not occur kidney tissue damage because mengkudu was able to repair kidney damage due to doxorubicin induction.
