EFFECT OF ETHANOLIC EXTRACT OF MORINDA CITRIFOLIA L. ON LIPID PROFILE OF HYPERCHOLESTEROLEMIA MALE WISTAR RAT

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Abstract

Hyperlipidemic state requires pharmacologic therapy, the materials of nature are considered more secure. Noni (Morinda citrifolia, L.) has long used the community as an alternative treatment of hyperlipidemia. Objective of the study was to determine the effect of ethanolic extract of noni with and without hypercholesterol diet on lowering lipid profiles.

Thirty male Wistar rats divided into 6 groups: P0 = negative control group, P1 = positive control group, P2 = received hypercholesterol diet and ethanolic extract of noni for 4 weeks, P3 = received hypercholesterol diet and ethanolic extract of noni for 8 weeks, P4 = received standard diet and extract ethanolic of noni for 4 weeks, P5 = received standard diet and ethanol extract of noni fruit for 8 weeks.

Groups of P2 and P3 decrease significantly levels of triglycerides, but no significantly different in lowering total cholesterol, LDL, the ratio LDL/HDL, and raise HDL level, whereas P4 and P5 have no significantly differences in lowering total cholesterol, triglycerides, LDL, the ratio of LDL/HDL, and increase HDL levels. Ethanolic extract of noni with hypercholesterol diet for 4 weeks showed significant differences in lowering total cholesterol, triglycerides, LDL, the ratio of LDL / HDL, but no significant differences in raising HDL. Whilst for 8 weeks showed significant differences in lowering levels of LDL and the ratio of LDL / HDL, but no significant differences in lowering cholesterol total, triglyceride, and raise HDL. Ethanolic extract of noni decrease total cholesterol, triglycerides, LDL, the ratio of LDL / HDL and raise HDL level.

Key words: hypercholesterol, Morinda citrifolia, L., LDL/HDL ratio, triglycerides
**Background**

Hyperlipidemic state requires pharmacologic therapy, the materials of nature are considered more secure. Noni (*Morinda citrifolia*, L.) has long used the community as an alternative treatment of hyperlipidemia. Objective of the study was to determine the effect of ethanolic extract of noni with and without hypercholesterol diet on lowering lipid profiles.

**Methodology**

Thirty male Wistar rats divided into 6 groups: P0 = negative control group, P1 = positive control group, P2 = received hypercholesterol diet and ethanolic extract of noni for 4 weeks, P3 = received hypercholesterol diet and ethanolic extract of noni for 8 weeks, P4 = received standard diet and extract ethanolic of noni for 4 weeks, P5 = received standard diet and ethanol extract of noni fruit for 8 weeks.

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Results
Groups of P2 and P3 decrease significantly levels of triglycerides, but no significantly different in lowering total cholesterol, LDL, the ratio LDL/HDL, and raise HDL level, whereas P4 and P5 have no significantly differences in lowering total cholesterol, triglycerides, LDL, the ratio of LDL / HDL, but no significant differences in raising HDL. Ethanol extract of noni with hypercholesterol diet for 4 weeks showed significant differences in lowering total cholesterol, triglycerides, LDL, the ratio of LDL / HDL, but no significant differences in raising HDL. Whilst for 8 weeks showed significant differences in lowering levels of LDL and the ratio of LDL / HDL, but no significant differences in lowering cholesterol total, triglyceride, and raise HDL. Ethanol extract of noni decrease total cholesterol, triglycerides, LDL, the ratio of LDL / HDL and raise HDL level.

Figure 1. Total cholesterol level of male wistar rat
No significantly different group (p>0,05) marked by the same abjad; significantly different group (p< 0,05) marked by different abjad; T = standar deviation (SD)
P0 = negative control (induce by standard diet for 2 weeks)
P1 = positive control (induce by hypercholesterol diet for 2 weeks)
P2 = induce by hypercholesterol diet for 2 weeks + ethanolic extract of noni 50 mg for 4 weeks with hypercholesterol diet
P3 = induce by hypercholesterol diet for 2 weeks + ethanolic extract of noni 50 mg for 8 weeks with hypercholesterol diet

P4 = induce by hypercholesterol diet for 2 weeks + ethanolic extract of noni 50 mg for 4 weeks with standard diet

P5 = induce by hypercholesterol diet for 2 weeks + ethanolic extract of noni 50 mg for 8 weeks with standard diet

**Conclusion**

Based on the results, we concluded that ethanolic extract of noni decrease total cholesterol, triglycerides, LDL, the ratio of LDL/ HDL and raise HDL level on male wistar rat induced by hypercholesterol diet.

**References**


