ISSN: 1391-8796
Proceedings of
5th Ruhuna International Science & Technology Conference
University of Ruhuna, Matara, Sri Lanka
February 15, 2018

Anti-hypercholesterolemic activity of *Phyllanthus reticulates (Wel-kyla) and Glochidion zeylanicum (Hunukirilla)* methanolic extracts on Wistar albino rats (*Mus norvegicus albinus*)

Dissanayaka, D. M. L. C, Weerakoon S. R.*, Somaratne, S, Nilakarawasam, N. and Ranasinghe, C.

Department Botany, Faculty of Natural Sciences, Open University of Sri Lanka
Department Zoology, Faculty of Natural Sciences, Open University of Sri Lanka
Department Chemistry, Faculty of Natural Sciences, Open University of Sri Lanka

Over accumulation of cholesterol in blood leads to hypercholesterolemia with severe health consequences. The present study focused the dose-dependent response of crude methanolic extract of air dried *P. reticulates* (*PR*-CME) and crude methanolic extract of *G. zeylanicum* (*GZ*-CME) in Wistar albino rats to determine the effective dose. Crude methanolic extract of each plant sample was obtained by Soxhelt extraction using 80% methanol and concentrating by rotary evaporator and vacuum oven. A hypercholesterol diet was orally introduced to male rats (n = 6/group). Air dried *PR*-CME and *GZ*-CME extracts of the dosage of 800 mg/kg, 1200 mg/kg and 1600 mg/kg were administered orally once a day for forty two (42) days and blood parameters were measured from the date of commencement and subsequently on 14th, 28th and 42nd days. Increasing *PR*-CME and *GZ*-CME concentrations showed dose dependent negative responses ($p \leq 0.05$) with total cholesterol, triglycerides and LDL-C while dose dependent positive response ($p \leq 0.05$) with HDL-C. By the 42nd day of the experiment *PR*-CME1600 (77.78±1.44) and *GZ*-CME1600 (83.48±4.37) treated groups reached the normal total cholesterol level of the NCG (78.14±4.68), making the total cholesterol levels insignificant ($p > 0.05$). At the end of the experiment *PR*-CME1600 (52.07±2.27) treated group reached the normal HDL-C levels of the NCG (57.06±3.15) indicating insignificantly different HDL-C levels ($p > 0.05$). Compared to cholesterolemic untreated group, the levels of total cholesterol, triglyceride and LDL-C were significantly decreased in all three doses of *PR*-CME and *GZ*-CME ($p \leq 0.05$). The **c**rude methanolic extract of *P. reticulates* was able to lower the levels of total cholesterol and increase HDL-C level up to normal level in rats within 42 days and *G. zeylanicum* was able to lower the level of total cholesterol in rats up to normal level within 42 days of treatment. The appropriate most effective dose is 1600mg/kg body weight.

Keywords: Cholesterol, *Wistar albino* rats, *Phyllanthus reticulates*, *Glochidion zeylanicum*

**Corresponding author: shyamaweerakoon@gmail.com*