

Phytochemical Screening, Antioxidant Activity, Lipid Profile Effect of Citrus reticulata Fruit Peel, Zingiber officinale Rhizome, and Sesamum indicum Seed Extracts

Authors : Samar Saadeldin Abdelmotalab Omer, Ikram Mohammed Eltayeb Elsiddig, Amna Beshir Medani Ahmed, Saad Mohammed Hussein Ayoub

Abstract : Many herbal medicinal products are considered as potential hypocholesterolemic agents with encouraging safety profiles, however, only a limited amount of clinical research exists to support their efficacy. The present study was designed to compare the antihypercholesterolaemic and antioxidant activities of the crude ethanolic extracts of Citrus reticulata peel, Zingiber officinale rhizome, and Sesamum indicum seeds. Forty-five rats were used throughout the experiment, which were divided into nine groups, five rats in each as follows; normal control group (normal rats fed with standard normal diet), rats fed hypercholesterolemic diet consisting of 1% cholesterol and 10% saturated animal fat, which were further divided into eight groups; hypercholesterolemic control group (rats only fed hypercholesterolemic diet), groups 3,4,5,6,7, and 8 were given Citrus reticulata, Zingiber officinale, and Sesamum indicum ethanolic extracts at doses of (250mg/kg and 500mg/kg, respectively) orally; and group 9 rats were given atorvastatin (0.18mg/kg) orally as a reference antihypercholesterolaemic drug. Blood samples were obtained four weeks following treatment from the retro-orbital venous plexus after fasting overnight from all groups and the lipid profile (serum total cholesterol (TC), high-density-lipoprotein-cholesterol (HDL-C), low-density lipoprotein-cholesterol (LDL-C), and triglycerides levels) was measured and the risk ratio (TC/HDL-C) was assessed. The antioxidant activity of the three plant extracts was determined using DPPH free-radical assay. Results of in vivo and in vitro antihypercholesterolaemic and antioxidant assay, respectively, revealed that the three extracts possess comparable antioxidant and anti-hypercholesterolaemic activities.

Keywords : anti hypercholesterolemic effects, antioxidant activity, HDL, LDL, TC, TGs, citrus reticulata, sesamum indicum, zingiber officinale

Conference Title : ICMAP 2015 : International Conference on Medicinal and Aromatic Plants

Conference Location : Penang, Malaysia

Conference Dates : December 03-04, 2015