

Antihyperglycaemic and Antihyperlipidemic Activities of Pleiogynium timorense Seeds and Identification of Bioactive Compounds

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Abstract : The aim of this study is to evaluate antihyperglycaemic and antihyperlipidemic activities of Pleiogynium timorense (DC.) Leenh (Anacardiaceae) seeds as well as to isolate and identify the bioactive compounds. Antihyperglycaemic effect was evaluated by measuring the effect of two dose levels (150 and 300 mg/kg) of 70% methanol extract of Pleiogynium timorense seeds on blood glucose level when administered 45 minutes before glucose loading. In addition, the effect of the plant extract on the lipid profile was determined by measuring serum total lipids (TL), total cholesterol (TC), triglycerides (TG), high density lipoprotein cholesterol (HDL-C) and low density lipoprotein cholesterol (LDL-C). Furthermore, the bioactive compounds were isolated and identified by chromatographic and spectrometric methods. The results showed that the methanolic extract of the seeds significantly reduced the levels of blood glucose, (TL), (TC), (TG) and (LDL-C) but no significant effect on (HDL-C) comparing with control group. Furthermore, four phenolic compound were isolated which were identified as; catechin, gallic acid, para methoxy benzaldehyde and pyrogallol which were isolated for the first time from the plant. In addition sulphur - containing compound (sulpholane) was isolated for the first time from the plant and from the family. To our knowledge, this is the first study about antihyperglycaemic and antihyperlipidemic activities of the seeds of Pleiogynium timorense and its bioactive compounds. So, the methanolic extract of the seeds of Pleiogynium timorense could be a step towards the development of new antihyperglycaemic and antihyperlipidemic drugs.

Keywords : antihyperglycaemic, bioactive compounds, phenolic, Pleiogynium timorense, seeds

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