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Effects of Aqueous Leaf Extract of *Passiflora suberosa* L. on Blood Glucose Levels of Male Mice

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Abstract

Extracts of the genes *Passiflora* has been shown to compromises a therapeutic value to control glycemia and lipid levels. Raw leaves of *Passiflora suberosa* L. (Family: Passifloraceae) is used as a traditional remedy to manage diabetes. Yet, its ethnomedical usage is not scientifically proven. The present study was conducted to examine the hypoglyceamic effect of the aqueous leaf extract (ALE) of *P. suberosa*, using normoglycemic male mice. ALE was prepared and mice (n=9/group), were treated with 25, 50, 100, 200 mg/kg ALE and distilled water (DW; control). Fasting and random blood glucose levels were determined at 1st, 3rd and 5th h post-treatment. Acute administration of 50 mg/kg of ALE significantly (p<0.01) reduced fasting blood glucose levels (BGL) by 10%, 20% and 24% respectively at 1st, 3rd and 5th h post treatment. Similarly, 100 mg/kg of ALE significantly (p<0.01) reduced fasting BGL at 3rd (24%) and 5th (29%) h post treatment. However, it did not change the random BGL in non-fasted mice. To evaluate the chronic effect of ALE, 18 mice (n=9) were treated orally either with 50 mg/kg of ALE or DW for 30 consecutive days and on day 31, fasting BGL was measured after 1,3 and 5 hrs. A significant reduction in fasting BGL was observed, at 1st (17%), 3rd (18%) and 5th (27%) h respectively. The same dose showed a significant (p<0.01) improvement in sucrose tolerance test (18%) after 5 hours. However, ALE did not show a significant improvement in glucose tolerance test following an oral glucose challenge. The findings from this study provide evidences for ethnomedical usage of *P. suberosa* as an anti-diabetic agent in the traditional Sri Lankan medicinal system.

Keywords: *Passiflora suberosa*, Aqueous leaf extract, Hypoglycemia, Blood glucose level

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