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## Letter to the Editor

### Evaluation of $\alpha$ -glucosidase inhibition of *Drimia nagarjunae*, a medicinal plant from South India

Sir,

Diabetes mellitus (type 2) is a metabolic disorder which results due to hyperglycemia associated with the imbalance in carbohydrate, fat and protein metabolism. There is an exponential increase in the incidence of diabetes the world over, especially in the Indian subcontinent (Kumar et al., 2015). One therapeutic approach for treating diabetes is to decrease postprandial hyperglycemia.  $\alpha$ -Amylase and  $\alpha$ -glucosidase are the key enzymes involved in the digestion of carbohydrates (Ali et al., 2006).  $\alpha$ -Glucosidase is the key enzyme catalyzing the final step in the digestive process of carbohydrates. Hence,  $\alpha$ -glucosidase inhibitors can retard the liberation of D-glucose from dietary complex carbohydrates and delay glucose absorption, resulting in reduced postprandial plasma glucose levels and suppression of postprandial hyperglycemia.

*Drimia nagarjunae* Hemadri et Swahari (Family: Liliaceae) is an endangered Indian medicinal plant, ethnopharmacologically used to treat breast abscess and to cure piles (Hemadri 2011; Sunil, 2011). *D. nagarjunae*

also showed prominent anticancer activity compared to standard drug, adriamycin (Alluri and Majumdar, 2015). The present investigation was aimed to perform  $\alpha$ -glucosidase inhibition of *D. nagarjunae*.

The leaves and bulbs were shade dried and powdered. The powdered samples were extracted sequentially with hexane, chloroform, ethyl acetate, methanol and water at 1:10 (w/v) concentrations by using soxhlet apparatus. The extracts were filtered through Whatman No. 1 filter paper and the filtrate collected. The filtrates were concentrated by rotary evaporator, stored at 4°C and used for further studies. Various concentrations of crude extracts, ranging from 0.5, 1, 1.5 and 2 mg/mL were prepared in DMSO and  $\alpha$ -glucosidase inhibition of various extracts was carried out according to Kimet al., (2010). Streptokinase and DMSO were used as positive and negative control respectively.

The  $\alpha$ -glucosidase inhibitory activity was measured in percentage (%) inhibition of extracts. Among all the tested extracts,  $\alpha$ -glucosidase inhibitory activity exhibited only in aqueous extracts of leaves and bulbs. The extracts were found to exhibit dose-dependent inhibition. The bulb extract exhibited maximum inhibition of  $77.2 \pm 0.5\%$  whereas streptokinase exhibited  $91.2 \pm 0.9\%$  at 2 mg/mL (Figure 1). To the best of our knowledge

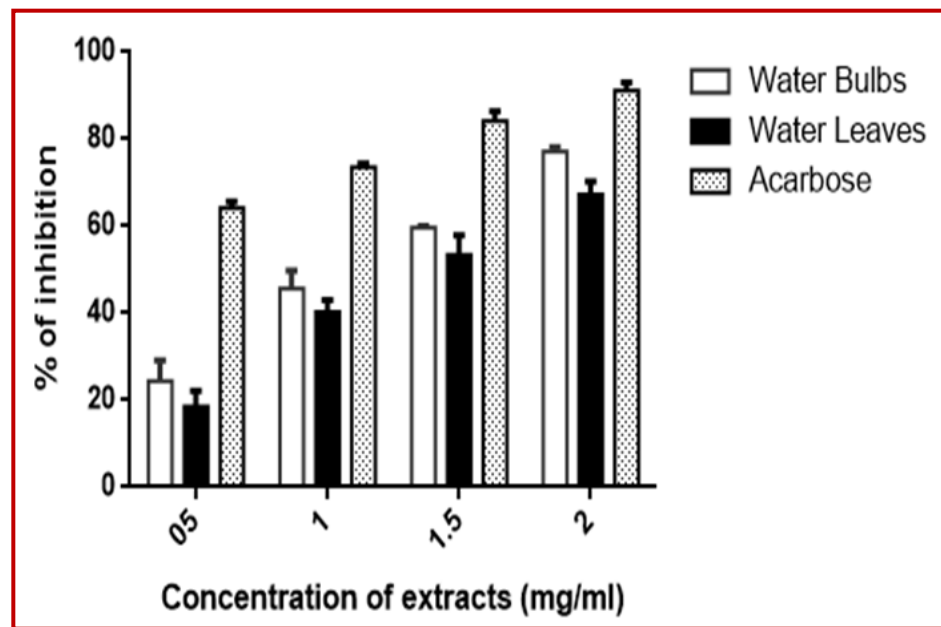


Figure 1:  $\alpha$ -Glucosidase inhibitory activity of *D. nagarjunae*



this is the first report on  $\alpha$ -glucosidase inhibitory activity of *D. nagarjunae*.

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