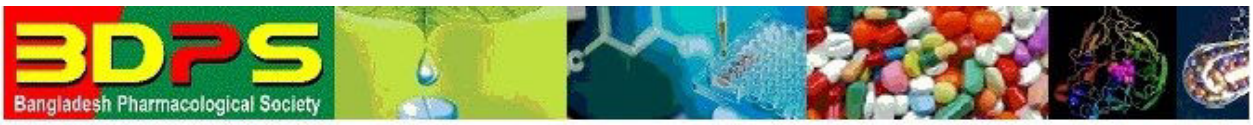


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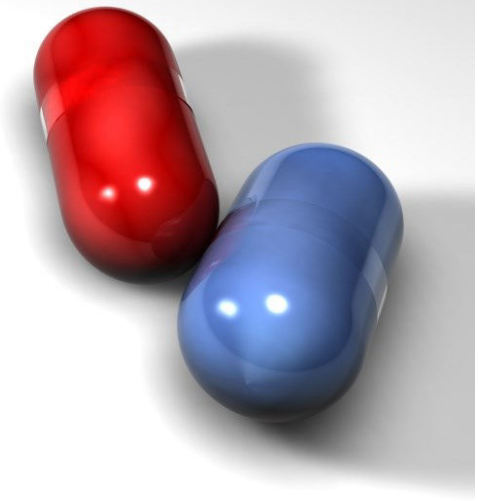

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# Letter to the Editor

## Phytochemical profile and *in vitro* α-amylase inhibitory potential of different solvent extracts of *Lantana camara*

Sir,

Methanolic leaf and fruit extracts of *Lantana camara* were reported to possess antihyperglycemic property in both streptozotocin- and alloxan-induced diabetic rats (Ganesh et al., 2010; Kazmi et al., 2012; Venkatachalam et al., 2011). However, α-amylase inhibition property of *L. camara* is yet to be investigated. Therefore, the present study was undertaken to examine phytochemistry and in vitro α-amylase inhibitory potential of different solvent extracts of *L. camara* leaves collected from local areas of Serdang, Malaysia in July, 2015.

The plant leaves were dried at room temperature and ground into powder. About 50 g of powdered leaves were extracted with 100 mL each of petroleum ether, chloroform, ethyl acetate, acetone, methanol and water and placed on orbital shaker at room temperature for 48 hours. After filtration, the filtrates were evaporated to dryness using rotavapor. The final yield of chloroform, ethyl acetate, acetone and methanol extracts were found to be 3.8%, 9.0%, 6.0% and 11.8% respectively. The phytocomponents present in each extract were determined using standard protocols (Harborne, 1998; Kumara et al., 2012). Final concentrations of each extracts were prepared by dissolving in dimethyl sulfoxide and α-amylase inhibitory assay was performed using the method of Tamil et al. (2010). The study employed acarbose as the standard inhibitor of α-amylase.

Preliminary phytochemical analysis revealed the presence of phenols, flavonoids and cardiac glycosides in all the solvent extracts tested. However, saponins were absent in chloroform extract while, in ethyl acetate, acetone and methanol extracts tannins were not determined (Table I). *In vitro* α-amylase inhibitory potential of various solvent extracts (20-100 µg/mL) of *L. camara* leaves are shown in Figure 1. Acetone extracts

**Table I**

**Phytochemical of different extracts of *L. camara* leaves**

| | Chloroform | Ethyl acetate | Acetone | Methanol |
|---|---|---|---|---|
| Phenols | Present | Present | Present | Present |
| Flavonoids | Present | Present | Present | Present |
| Saponins | Absent | Present | Present | Present |
| Tannins | Present | Absent | Absent | Absent |
| Cardiac glycosides | Present | Present | Present | Present |
| Terpenoids | Present | Absent | Absent | Present |

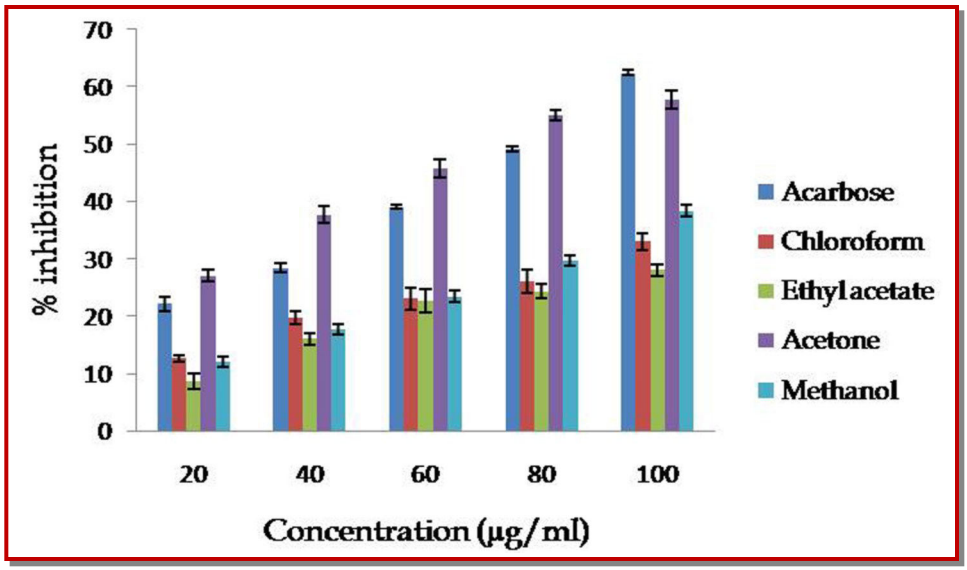


Figure 1: *In vitro* α-amylase inhibitory potential of various solvent extracts of *Lantana camara*

at 100 µg/mL concentration exhibited predominant α-amylase inhibitory potential (57.7 ± 1.5%) with an $IC_{50}$ value of 66.8 µg/mL. The reference drug, acarbose inhibited 62.4 ± 0.4% of α-amylase activity at 100 µg/mL concentration and its $IC_{50}$ value was found to be 80 µg/mL. As the concentration of all the extracts increased, the inhibitory potential was observed to increase representing a dose dependent α -amylase inhibitory activity. Ethyl acetate extract at 20 µg/mL concentration had the lowest inhibitory activity (8.66 ± 1.3%). On the other hand, chloroform, ethyl acetate and methanol extracts at 100 µg/mL exhibited 33 ± 1.5 %, 28 ± 1.5 % and 36.3 ±0.6 % respectively with $IC_{50}$ value of >150 µg/mL. Acetone extracts of *L. camara* exhibited superior α-amylase inhibitory potential in comparison to standard drug, acarbose.

Thus, this study indicates the possible exploration of *L. camara* in the development of new drug molecule to combat type 2 diabetes by inhibiting carbohydrate hydrolyzing enzymes.

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