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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 phytochemicals present in each extract were determined using standard protocols (Harborne, 1978; 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 μ g/mL) of *L. camara* leaves is shown in Figure 1. Acetone extracts at 100 μ g/mL concentration exhibited predominant α -

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

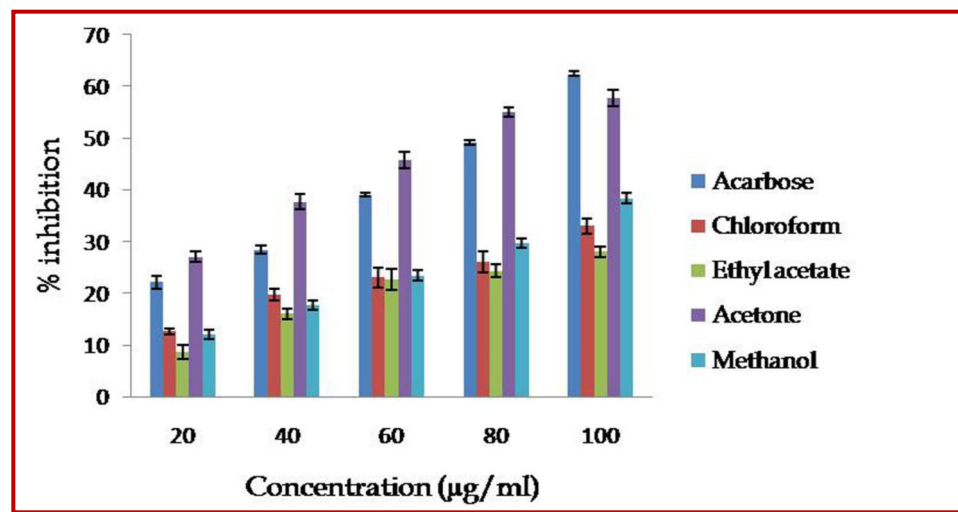


Figure 1: *In vitro* α -amylase inhibitory potential of various solvent extracts of *Lantana camara*



amylase inhibitory potential ($57.7 \pm 1.5\%$) with an IC_{50} value of $66.8 \mu\text{g/mL}$. The reference drug, acarbose inhibited $62.4 \pm 0.4\%$ of α -amylase activity at $100 \mu\text{g/mL}$ concentration and its IC_{50} value was found to be $80 \mu\text{g/mL}$. 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 $20 \mu\text{g/mL}$ concentration had the lowest inhibitory activity ($8.66 \pm 1.3\%$). On the other hand, chloroform, ethyl acetate and methanol extracts at $100 \mu\text{g/mL}$ exhibited $33 \pm 1.5\%$, $28 \pm 1.5\%$ and $36.3 \pm 0.6\%$ respectively with IC_{50} value of $>150 \mu\text{g/mL}$. 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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