# Anti-obesity potential of selected tropical plants via pancreatic lipase inhibition

ABSTRACT

Natural products are a vast source of potential compounds that can be developed as anti-obesity agent. One of the mechanisms of anti-obesity agents is inhibition of pancreatic lipase. Assay of 24 crude extracts for their in vitro activity against porcine pancreatic lipase (PPL) detected four extracts demonstrating high (>70%) inhibition, seven extracts had medium (30-70%) inhibition and the remaining 13 extracts exhibited low (<30%) inhibition when incubated with PPL at a concentration of 500µg/ml for 10min at 37°C. Phyllanthus niruri extract displayed the most potent PPL inhibitor, followed by Orthosiphon stamineus, Murraya paniculata and Averrhoa bilimbi with the IC50 value of 27.7<34.7< 41.5<55.2µg/ml, respectively. P. niruri & O. stamineus (the best two extracts) showed noncompetitive and uncompetitive inhibition, respectively. P. niruri & O. stamineus displayed total phenolic content of 431.0±0.01 and 103.0±0.01mg GAE/g dry extract, while total flavonoid content of 14.8±0.07 and 21.6±0.03mg QE/g dry extract, respectively. Both P. niruri & O. stamineus extracts showed high antioxidant activity, with EC50 values of 8.4 and 26.3µg/ml, respectively. The results suggest that P. niruri & O. stamineus may be beneficial for obesity treatment via pancreatic lipase inhibition action.

**Keyword:** Pancreatic lipase inhibitor; Phyllanthus niruri; Orthosiphon stamineus; Obesity