

## 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 IC<sub>50</sub> 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 EC<sub>50</sub> 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