Medicinal plants in Sabah (North Borneo) exhibit antipancreatic lipase, anti-amylase, and antioxidant properties

ABSTRACT

Medicinal plants have been widely used for their notable health benefits and help in disease prevention for generations. In recent years, obesity has become among the risk factors of hyperglycemia and oxidation stress. This study aims to investigate the potential of plants in Sabah, North Borneo to inhibit the key enzymes involved in obesity, hyperglycemia and oxidative stress. A total of 46 plant extracts were subjected to anti-pancreatic lipase, α-amylase inhibition and antioxidant assays. It was observed that S43 (Lantana camara) exhibited the greatest IC50 of anti-pancreatic lipase activity (mean of IC50 (±S.D.) = 0.20 mg mL-1 ± 0.010). Cinnamomum sp. (S42) has the most substantial α-amylase activity with a mean IC50 (±S.D.) = 2.68 mg mL-1 ± 0.471. S19 (Glochidion rubrum) was the most effective antioxidants (mean of IC50 (±S.D.) = 0.011 mg mL-1 ± 0.004) among all the investigated samples. Interestingly, three plant extracts were found (S6-Buchanania sp.; S22-Vitex negundo and S42-Cinnamomum sp.) to exhibit inhibition activity in ant pancreatic lipase, α-amylase and antioxidant assays. The bioactivities of plant extracts have been closely related to the content of phytochemicals, as in earlier studies. Thus, plants have the potential to serve as supplements and nutraceuticals for obesity and other related complications.