

Physicochemical, phytochemical and antimicrobial properties of wild honey collected at mangrove and mountain areas in Sabah, Malaysian Borneo

Abstract

Objective: The aim of this study was to determine the physicochemical, phytochemical content and antimicrobial properties of selected honey of Sabah, Malaysian Borneo. **Methods:** A standardized protocols were used to evaluate the physicochemical properties of selected honey of Sabah while the phytochemicals content (phenolics and flavonoids) were determined using Folin-Ciocalteu and aluminium colorimetric methods. Antimicrobial properties were evaluated using disc diffusion assay. **Results:** For 80% methanol extract, old Upper Mountain honey contained the highest free acidity, conductivity, total phenolic and flavonoid contents with the values 23.84 ± 0.42 ml/g, 0.61 ± 0.01 mS/cm, 9.71 ± 0.01 mg gallic acid equivalent (GAE)/g and 7.76 ± 0.02 mg rutin equivalent (RU)/g, respectively. Antimicrobial activity showed strong inhibition by old Upper Mountain honey extract (80% methanol extract) with the value of 6.00 ± 0.01 mm at concentration of 100% against gram-positive bacteria (*Staphylococcus aureus* and *Bacillus subtilis*). The same trend of phytochemicals content and antimicrobial activity was also observed in absolute methanol extracts. **Conclusion:** The present results suggested that wild raw honey collected at mangrove and mountain area in Sabah contained a wide range of phytochemical compounds which has the potential for human health.