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Screening of Xanthine Oxidase Inhibitor from Potential Malaysian Medicinal Plants

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ABSTRACT

Malaysia has a rich diversity of medicinal plants and some of them are believed to have the property to inhibit xanthine oxidase activity, which can be introduced as a new natural source of gout medication and a substitute for synthetic xanthine oxidase inhibitors (XOI). In this study, forty two samples from seventeen plant species were examined for xanthine oxidase inhibitory activity. Selection of plants was based on their frequent usages by local folks for their medicinal benefits and their activity in three different extraction solvents. The degree of XO inhibition was determined by measuring the absorbance spectrophotometrically at 295 nm associated with uric acid formation. Ninety-nine percent of the crude extracts were found to have XO inhibitory activity at 100µg/ml, and 59% showed greater than 50% inhibition. The ripe fruit peels of *Garcinia mangostana* L. has the potential to be exploited as an alternative to allopurinol as the crude extracts of this plant material from all three solvents, namely, 70% methanol, ethanol and distilled water, exhibited the highest XOI activity with 88.74%, 84.69% and 80.18% inhibition, respectively. The ripe fruit peels of *Cucumis sativus* and the leaves of *Morinda citrifolia* can also be considered as potential alternatives to allopurinol as they have demonstrated the second and third highest XOI activity especially with 70% methanol as the extraction solvent.

KEYWORDS: *Garcinia mangostana* L., medicinal plants, screening, xanthine oxidase inhibitor.