

Correlation between the extraction yield of mangiferin to the antioxidant activity, total phenolic and total flavonoid content of *Phaleria macrocarpa* fruits

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ABSTRACT

This paper elucidates the correlation between the yield of mangiferin extraction from *Phaleria macrocarpa* fruits to the total phenolic content (TPC), total flavonoid content (TFC) and antioxidant activity (AA). Mangiferin extraction was performed using an ultrasonic assisted extraction (UAE) method. The effect of particle size, solvent to solid ratio, solvent type, ethanol concentration, sonication amplitude and extraction time were studied. The best UAE condition was found using a particle size of 125–250 μm , solvent to solid ratio of 40 mL/g, 40% ethanol, sonication amplitude of 60% and extraction time of 5 min, which produced 28.6 mg mangiferin/g DW, 78.7 mg GA/g DW, 263.2 mg QE/g DW and 57.2% DPPH-RSA. The regression analysis showed a significant ($p < 0.05$) correlation between the mangiferin yield and either TPC, TFC or AA. The finding reported in this work provides a useful method to predict the mangiferin yield based on TPC, TFC or AA, without needing the actual external standard.

KEYWORDS

Phaleria macrocarpa; Ultrasonic assisted extraction; Mangiferin; Antioxidant activity; UHPLC-PDA

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