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Short communication

Optimization of mangiferin extrated from *Phaleria macrocarpa* fruits using response surface methodology

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ABSTRACT

Phaleria macrocarpa locally known as Mahkota Dewa is one of the important medicinal plants that originates from Papua Island, Indonesia and grows in tropical areas. Mangiferin is one of the major bioactive compounds of *Phaleria macrocarpa*. The effect of extraction time (4–6 h) and extraction temperature (90–110 °C) on the mangiferin yield were investigated using Face Centered Central Composite Design (FCCCD) with five centre points under Response Surface Methodology (RSM). The presence of mangiferin in the extract was confirmed using HPLC-DAD and the functional groups were identified through FTIR analyses. A second order polynomial model was employed in predicting the response. The regression analysis showed that more than 98% of the variation was explained by the models with the optimum of 38.7 mg/g mangiferin yield at 105 °C and 6 h extraction time. The experimental values show good accuracy with those predicted (1.1% deviation), thus indicating the suitability of the model employed and the success of FCCCD in optimizing the extraction conditions.

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