Optimisation of Solid Liquid Extraction of Orthosiphon stamineus Leaves using Response Surface Methodology Technique

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ABSTRACT

Orthosiphon stamineus is one of the popular medicinal plants in Southeast Asia. O. stamineus leaves are used in numerous applications related to medicinal purposes and are believed to cure certain health conditions such as hypertension, gout and fever. The aim of this study was to investigate the effect of three parameters involved in extraction process including extraction temperature, extraction duration and solvent to solid ratio on extraction yield, antioxidant activity and referral markers of O. stamineus leaves. The optimisation of extraction processes was evaluated with the aid of Design-Expert software using response surface methodology (RSM). The optimum extraction parameter for O. stamineus leaves were recorded at the extraction temperature of 60°C, 30:1 (ml:g) solvent to solid ratio and 6 hours extraction duration with 30Wt% extract, 67 and 1 mg/L concentration of Rosmarinic acid and Sinensetin, respectively. Antioxidant activity for optimized extract is 96.56% and 91.51% of SOD and DPPH method, respectively

KEYWORDS: Optimization process, extraction parameter, antioxidant activity, response surface methodology, O. Stamineus