

Assessment of Phenolic Compounds Stability And Retention During Spray Drying of *Orthosiphon Stamineus* Extracts

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ABSTRACT

This paper presents a microencapsulation study using whey protein isolate and maltodextrin of polyphenol obtained from *Orthosiphon stamineus* leaves. Polyphenol content was analysed using ultra-performance liquid chromatography. Higher solid concentration leads to higher solution viscosity, bigger particle size, lower moisture content and less dented surface, which may improve particle flowability. Microencapsulation using a least amount of protein (0.05 wt.%) yielded better retention of rosmarinic acid (82.08%), sinensetin (79.57%) and eupatorin (81.08%) than those with higher protein concentration. Meanwhile, 5.33 wt.% of maltodextrin provide the highest polyphenol retention of rosmarinic acid (82.67%), sinensetin (82.24%) and eupatorin (80.19%). The results suggest that eupatorin and rosmarinic acid are more susceptible to thermal degradation than sinensetin during spray drying. Formulation using 5.33% maltodextrin provide a better preservation of polyphenols compared to other formulations.

KEYWORDS: *Orthosiphon stamineus*; Extraction; Eupatorin; Rosmarinic acid; UPLC; Microencapsulation

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