

**ABSTRACT**

**EFFECT OF HPMC K100M CONCENTRATION AND  
MILLING TIME ON PHYSICAL CHARACTERISTICS OF  
HESPERETIN NANOSUSPENSION**

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Hesperetin is a flavanone compound with many pharmacological effects. However, its poor solubility in water and fast elimination from the body causes low bioavailability of this compound when given orally. Formulating hesperetin as nanosuspensions could overcome these problems. Additionally, the use of stabilizer with sustained release properties, such as HPMC K100M, might prolong its elimination time. The aim of this study is to optimize the effective concentration of HPMC K100M in producing physically stable hesperetin nanosuspensions with particle size below 400 nm, and to optimize the effective storage condition for hesperetin nanosuspension. Three different concentrations of HPMC K100M were applied (10%, 20%, 30% w/w) and milling was conducted up to 48 hours. Final nanosuspensions were stored for 4 weeks at three different storage temperatures. HPMC K100M at concentration 20% w/w was able to form smallest and stable hesperetin nanosuspensions. In addition, the optimum storage condition to keep hesperetin nanosuspensions was at 8°C.

**Keyword** : hesperetin, HPMC K100M, milling, nanosuspension