ABSTRACT

Optimization of the Dissolution Test for Nanocrystal Hesperetin
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Hesperetin is an aglycon of flavanone glycoside hesperidin, which is poorly soluble in water. This poorly soluble characteristic becomes a hindrance in the absorption of hesperetin when given orally, particularly due to the slow dissolution rate of this compound. One of the strategies which can be applied to overcome this problem is by formulating hesperetin as nanocrystals. In this study, hesperetin has been formulated into nanocrystal using poloxamer 407 as the stabilizer. Preparation of nanocrystals was conducted using wet ball milling method. With regard to the dissolution assay, up to now there is no compendial method has been established for the dissolution test of nanocrystals particularly hesperetin. The aim of this research was to develop dissolution test method of nanocrystal hesperetin with standard phosphate buffer pH 6.8 as the dissolution medium. A non-ionic surfactant, Tween® 80, was added into phosphate buffer pH 6.8 to meet sink condition. Dissolution test was carried out at two different stirring speeds: 50 rpm and 100 rpm. The results showed that there was no significant difference between hesperetin nanocrystals dissolution profile at stirring speed 50 rpm and 100 rpm.

Keywords : Hesperetin, Poloxamer 407, Nanocrystals, Dissolution