ABSTRAK

Kunyit (*Curcuma longa* L.) merupakan salah satu tanaman herbal yang banyak digunakan dalam pengobatan karena mengandung kurkuminoid yang memiliki manfaat sebagai antioksidan, antiinflamasi, antivirus, antijamur, serta antikanker. Namun, pemanfaatan kurkumin memiliki kendala pada kelarutannya. Kurkumin termasuk dalam *biopharmaceutics classification system* (BCS) kelas II yang memiliki kelarutan rendah namun permeabilitas yang tinggi. Metode yang digunakan untuk meningkatkan kelarutan kurkumin adalah dengan membuat dispersi padat kurkumin. Dalam pembuatan dispersi padat kurkumin, persentase ekstrak kunyit yang terkandung dalam total formula disebut dengan *drug load.*

Penelitian ini dilakukan dengan membuat dispersi padat ekstrak kunyit-*hydroxypropyl methylcellulose E5* (HPMC E5) menggunakan metode *spray drying* dan bertujuan untuk mengetahui pengaruh variasi *drug load* terhadap profil disolusi kurkumin. Variasi *drug load* yang digunakan adalah 20%, 30%, dan 40% serta dispersi padat dibuat dengan cara ekstrak kunyit dan HPMC E5 dilarutkan masing-masing, kemudian kedua larutan dicampurkan hingga homogen dan pelarut diuapkan menggunakan suhu tinggi pada alat *spray dryer* dan diperoleh hasil akhir serbuk dispersi padat ekstrak kunyit-HPMC E5. Serbuk dispersi padat diuji disolusinya menggunakan alat uji disolusi tipe dayung dan hasil disolusi dianalisis menggunakan uji statistik one way ANOVA pada taraf kepercayaan 95%. Hasil yang diperoleh menunjukan terdapat perbedaan signifikan pada profil disolusi kurkumin antar variasi *drug load* yang ditunjukan dengan nilai p *value* <0,05.

Kata kunci: Dispersi Padat, Kurkumin, HPMC E5, *Spray Drying*

ABSTRACT

Turmeric (Curcuma longa L.) is a widely used herbal medicine due to its curcuminoid content, which has antioxidant, anti-inflammatory, antiviral, antifungal, and anticancer properties. However, the use of curcumin is hampered by its solubility. Curcumin is classified as a class II biopharmaceutics classification system (BCS) agent, which has low solubility but high permeability. A method used to increase curcumin solubility is to create a solid dispersion of curcumin. In the preparation of a solid dispersion of curcumin, the percentage of turmeric extract contained in the total formula is referred to as the drug load.

This study was conducted by creating a solid dispersion of turmeric extract-hydroxypropyl methylcellulose E5 (HPMC E5) using the spray drying method. The aim was to determine the effect of varying the drug load on the dissolution profile of curcumin. The drug load variations used were 20%, 30%, and 40% and the solid dispersion was made by dissolving turmeric extract and HPMC E5 *respectively, then the two solutions were mixed until homogeneous and the solvent was evaporated using a high temperature in a spray dryer and the final result was a solid dispersion powder of turmeric extract-HPMC E5. The solid dispersion powder was tested for dissolution using a paddle-type dissolution tester and the dissolution results were analyzed using one-way ANOVA statistical test at 95% confidence level. The results obtained showed a significant difference in the curcumin dissolution profile between drug load variations as indicated by a p value <0.05.*

Keywords: *Solid Dispersion, Curcumin, HPMC E5, Spray Drying*