ABSTRAK

Kurkumin merupakan salah satu senyawa yang terkandung dalam rimpang kunyit (*Curcuma longa* L.) dengan berbagai manfaat terapeutik seperti aktivitas antibakteri, antiinflamasi, antioksidan, antimutagenik dan antikanker. Namun, aplikasi klinis kurkumin terbatas karena kelarutannya yang rendah dalam air dan termasuk ke dalam *Biopharmaceutical Class System* (BCS) kelas II yang memiliki permeabilitas tinggi namun bioavailabilitas rendah. Dispersi padat menjadi salah satu metode yang dapat digunakan untuk meningkatkan kelarutan dan laju disolusi kurkumin. Tujuan penelitian ini untuk melihat pengaruh variasi *drug load* terhadap profil disolusi kurkumin dalam dispersi padat ekstrak kunyit berbasis PEG 10000. Metode dispersi padat yang digunakan dalam penelitian ini yaitu metode peleburan. Berdasarkan hasil, didapatkan variasi *drug load* pada dispersi padat ekstrak kunyit berbasis PEG 10000 dengan metode peleburan berpengaruh signifikan ($p<0,05$) terhadap profil disolusi kurkumin. Hasil nilai DE_{120} kurkumin dari tertinggi hingga terendah berturut-turut yaitu DP 1 (57,4471) > DP 2 (42,5664) dan DP 3 (37,5730). Efisiensi disolusi kurkumin cenderung meningkat seiring dengan peningkatan konsentrasi *drug load*.

Kata kunci: Ekstrak kunyit, kurkumin, dispersi padat, PEG 10000, *drug load*.

ABSTRACT

Curcumin is a compound contained in turmeric rhizome (Curcuma longa L.) with various therapeutic benefits such as antibacterial, anti-inflammatory, antioxidant, antimutagenic and anticancer activities. However, the clinical application of curcumin is limited due to its low solubility in water and is included in the Biopharmaceutical Class System (BCS) class II which has high permeability but low bioavailability. Solid dispersion is one method that can be used to increase the solubility and dissolution rate of curcumin. The purpose of this study was to observe the effect of drug load variations on the dissolution profile of curcumin in a solid dispersion of PEG 10000-based turmeric extract. The solid dispersion method used in this study was the melting method. Based on the results, it was found that drug load variations in the solid dispersion of PEG 10000-based turmeric extract with the melting method had a significant effect ($p < 0.05$) on the dissolution profile of curcumin. The results of the DE120 values of curcumin from the highest to the lowest were DP 1 (57.4471) > DP 2 (42.5664) and DP 3 (37.5730). The dissolution efficiency of curcumin tends to increase with increasing drug load concentration.

Keywords: *Turmeric extract, curcumin, solid dispersion, PEG 10000, drug load.*