

ABSTRAK

Kunyit (*Curcuma longa* L.) merupakan tanaman herbal yang termasuk ke dalam famili Zingiberaceae. Rimpang kunyit mengandung senyawa utama berupa kurkumin yang berperan penting dalam aktivitas biologis kunyit, seperti antioksidan, anti-inflamasi, antibakteri, dan antidiabetes. Kurkumin termasuk ke dalam BCS kelas II yaitu senyawa dengan kelarutan yang rendah, sehingga dilakukan formulasi dispersi padat berbasis PEG 10000 dan Gelucire 48/16 agar dapat meningkatkan laju disolusi kurkumin. Penelitian ini bertujuan untuk melihat pengaruh rasio PEG 10000:Gelucire 48/16 terhadap laju disolusi dispersi padat ekstrak kunyit dengan metode *fusion*. Variasi rasio yang digunakan dalam formula dispersi padat ekstrak kunyit PEG 10000:Gelucire 48/16 yaitu 1:0,5; 1:1; dan 1:2 dengan *drug load* 30%. Hasil %DE₁₂₀ kurkumin dari yang tertinggi hingga terendah yaitu DP 1 (8,76%), DP 2 (7,79%), dan DP 3 (5,54%). Terdapat tren penurunan efisiensi disolusi seiring dengan peningkatan rasio Gelucire 48/16.

Kata Kunci: Dispersi padat, ekstrak kunyit, kurkumin, PEG 10000, Gelucire 48/16



ABSTRACT

Turmeric (Curcuma longa L.) is an herbal plant belonging to the Zingiberaceae family. Turmeric rhizomes contain curcumin as the main compound that plays an important role in the biological activities of turmeric as an antioxidant, anti-inflammatory, antibacterial, and antidiabetic agent. Curcumin is classified as a BCS class II compound, characterized by low solubility, thus solid dispersion formulation based on PEG 10000 and Gelucire 48/16 was developed to enhance the dissolution rate of curcumin. This study aims to investigate the effect of PEG 10000:Gelucire 48/16 ratio on the dissolution rate of turmeric extract solid dispersion prepared by fusion method. The ratio variations used in the turmeric extract solid dispersion formula of PEG 10000:Gelucire 48/16 were 1:0,5; 1:1; and 1:2 with a drug load 30%. The %DE₁₂₀ results of curcumin from highest to lowest were DP 1 (8,76%), DP 2 (7,79%), and DP 3 (5,54%). There was a decreasing trend in dissolution efficiency with increasing Gelucire 48/16 ratio.

Keywords: Solid dispersion, turmeric extract, curcumin, PEG 10000, Gelucire 48/16

