ABSTRAK

Kurkumin merupakan senyawa aktif utama dalam kunyit dan memiliki efek farmakologis yang luas. Kurkumin termasuk dalam senyawa *Biopharmaceutical Classification System* (BCS) kelas II, yaitu senyawa dengan kelarutan yang rendah namun permeabilitas tinggi. Kelarutan kurkumin hanya 11 ng/mL dalam medium dengan pH 5,0. Kelarutan yang rendah akan menyebabkan disolusi dan bioavailabilitas oral juga rendah. Peningkatkan kelarutan dan disolusi kurkumin dapat dilakukan dengan metode dispersi padat. Penelitian ini bertujuan untuk mengetahui pengaruh perbedaan rasio Manitol : Gelucire 48/16 terhadap profil disolusi kurkumin dalam dispersi padat ekstrak kunyit dengan metode *spray drying*. Dispersi padat ekstrak kunyit dibuat dengan metode penguapan pelarut menggunakan *spray dryer.* Dispersi padat dibuat dengan rasio Manitol : Gelucire 48/16 (8:2; 7:3; 6:4) dan ekstrak kunyit dengan proporsi *drug load* 30%. Hasil penelitian menunjukkan $\%DE_{120}$ kurkumin jika diurutkan dari yang tertinggi yaitu DP3 (46,16%), DP2 (45,37%), DP1 (44,74%), CF3 (26,03%), CF2 (25,77%), dan CF1 (22,55%). Berdasarkan nilai tersebut, dapat disimpulkan bahwa semakin bertambah rasio Gelucire 48/16 semakin meningkat juga profil disolusi kurkumin.

Kata Kunci: Kurkumin, dispersi padat, manitol, Gelucire 48/16, *drug load*, disolusi.

ABSTRACT

Curcumin is the main active compound in turmeric and has a wide range of pharmacological effects. Curcumin is classified as a Biopharmaceutical Classification System (BCS) class II compound, which means it has low solubility but high permeability. The solubility of curcumin is only 11 ng/mL in a medium with a pH of 5.0. Low solubility results in low dissolution and oral bioavailability. Enhancing the solubility and dissolution of curcumin can be achieved through solid dispersion methods. This study aims to investigate the effect of varying the mannitol : Gelucire 48/16 ratio on the dissolution profile of curcumin in solid dispersions of turmeric extract using spray drying. Solid dispersions of turmeric extract were prepared using solvent evaporation with a spray dryer. Solid dispersions were prepared with mannitol : Gelucire 48/16 ratios of 8:2, 7:3, and 6:4, and turmeric extract with a drug load of 30%. The results showed that the $\%DE_{120}$ of curcumin, when ranked from highest to lowest, were DP3 (46.16%), DP2 (45.37%), DP1 (44.74%), CF3 (26.03%), CF2 (25.77%), and CF1 (22.55%). Based on these values, it can be concluded that as the Gelucire 48/16 ratio increases, the curcumin dissolution profile also increases.

Keywords: Curcumin, solid dispersion, mannitol, Gelucire 48/16, drug load, dissolution.