

ABSTRAK

Kunyit (*Curcuma longa* L.) mengandung senyawa kurkumin yang tergolong dalam kelas II pada sistem *Biopharmaceutics Classification System* (BCS) yang dapat diartikan bahwa kurkumin memiliki kelarutan yang rendah namun permeabilitas tinggi. Kelarutan yang rendah dapat menyebabkan disolusi obat rendah. Maka, salah satu cara untuk meningkatkan kelarutan dan laju disolusi obat yaitu dispersi padat. Penelitian ini merupakan penelitian esperimental murni yang bertujuan untuk meningkatkan profil disolusi kurkumin dari dispersi padat ekstrak kunyit berbasis *poloxamer* 188 menggunakan metode *kneading* dengan variasi *drugload* 20%, 37,5%, dan 50%.

Parameter yang diukur adalah *drug load*, kelarutan, dan efisiensi disolusi. Analisis kadar kurkumin dilakukan menggunakan spektrofotometer UV-Visibel. Data yang diperoleh diuji secara statistik dengan *unpaired T-test* pada taraf kepercayaan 95%. Hasil penelitian yang diperoleh yaitu dispersi padat ekstrak kunyit berbasis *poloxamer* 188 dapat meningkatkan laju disolusi kurkumin dibandingkan campuran fisik. Hasil analisis statistik terhadap peningkatan laju disolusi kurkumin dispersi padat antar *drug load* 20%, 37,5%, dan 50% tidak terdapat perbedaan signifikan ($p > 0,05$). *Drug load* 20% menunjukkan efisiensi disolusi (DE_{180}) tertinggi yaitu $58,53 \pm 0,27\%$.

Kata Kunci : Dispersi padat, kurkumin, *Poloxamer* 188, metode *kneading*

ABSTRACT

Turmeric (*Curcuma longa* L.) contains the compound curcumin, which is classified as class II in the Biopharmaceutics Classification System (BCS). This classification implies that curcumin has low solubility but high permeability. Low solubility can lead to poor drug dissolution. Therefore, one way to enhance the solubility and dissolution rate of drugs is through solid dispersion. This study is a pure experimental research aimed at improving the dissolution profile of curcumin from solid dispersion of turmeric extract based on *poloxamer* 188 using the kneading method with drugload variations of 20%, 37.5%, and 50%.

The parameters measured include drug load, solubility, and dissolution efficiency. The analysis of curcumin content was performed using a UV-Visible spectrophotometer. The data obtained were statistically tested with an unpaired T-test at a 95% confidence level. The research results indicate that solid dispersions of turmeric extract based on *poloxamer* 188 can enhance the dissolution rate of curcumin compared to physical mixtures. Statistical analysis of the increased dissolution rate of curcumin in solid dispersion at drug load levels of 20%, 37.5%, and 50% showed no significant difference ($p > 0.05$). Drug load of 20% exhibited the highest dissolution efficiency (DE_{180}) at $58.53 \pm 0.27\%$.

Keywords : Dissolution, solid dispersion, curcumin, *Poloxamer* 188, kneading method