

INTISARI

Kunyit (*Curcuma domestica* Val.) banyak digunakan dalam masyarakat. Kandungan utama rimpang kunyit adalah kurkuminoid, yang terdiri dari kurkumin, demetoksikurkumin, dan bisdemetoksikurkumin. Kurkumin memiliki banyak efek farmakologi, seperti antioksidan, antiinflamasi, antimikrobia, dan antikanker. Namun, kurkumin mempunyai kelarutan yang sangat rendah dalam air. Kelarutan senyawa dapat ditingkatkan dengan pembuatan dispersi padat.

Penelitian ini bertujuan untuk mengetahui pengaruh proporsi *drug load* terhadap disolusi dispersi padat *vacuum dried* isolat ekstrak rimpang kunyit-gom guar. Penelitian ini dilakukan dengan pembuatan campuran fisik dan dispersi padat menggunakan pembawa gom guar pada proporsi *drug load* 1,72%, 3,38%, dan 5,11%. Disolusi campuran fisik dan dispersi padat dilihat melalui uji disolusi menggunakan medium cairan lambung buatan tanpa pepsin (pH 1,2), lalu diukur dengan spektrofotometer visibel λ 421,6 nm.

Hasil uji disolusi dibuat kurva antara waktu dan persentase kurkumin terdisolusi. Disolusi kurkumin pada dispersi padat meningkat secara signifikan dibandingkan dengan campuran fisik, dilihat dari nilai $p < 0,05$. Korelasi antara proporsi *drug load* dan disolusi kurkumin dianalisis dengan korelasi Spearman dan regresi. Korelasi Spearman menunjukkan adanya korelasi yang kuat ($r = -0,685$). Pada analisis regresi didapatkan persamaan $y = -2,7204x + 18,047$ dengan nilai signifikansi 0,028. Peningkatan proporsi *drug load* berpengaruh terhadap penurunan disolusi kurkumin.

Kata kunci: isolat ekstrak rimpang kunyit, gom guar, dispersi padat, *vacuum drying*, disolusi

ABSTRACT

Turmeric (*Curcuma domestica* Val.) widely used in society. The main content of turmeric are curcuminoids, consisting of curcumin, demetoksikurkumin, and bisdemetoksikurkumin. Curcumin has many pharmacological effects, such as antioxidant, antiinflammatory, antimicrobial, and anticancer. However, curcumin has very low solubility in water. Solubility of compounds can be enhanced by making solid dispersions.

This study aims to determine the influence of the proportion of drug load on the dissolution of solid dispersion vacuum dried isolate turmeric rhizome extract-guar gum. Research was conducted by making physical mixtures and solid dispersions using guar gum on the proportion of carriers of drug load 1,72%, 3,38%, and 5,11%. Dissolution of physical mixture and solid dispersion seen through the dissolution test using the medium of artificial gastric fluid without pepsin (pH 1,2), then measured by visible spectrophotometer λ 421,6 nm.

Dissolution test results made the curve between time and percentage of curcumin terdissolusi. Dissolution of curcumin on solid dispersion increased significantly compared with physical mixture, judging from the value of $p < 0,05$. The correlation between the proportion of drug load and dissolution of curcumin were analyzed with Spearman correlation and regression. Spearman correlation showed a strong correlation ($r = -0,685$). In the regression analysis equation $y = -2,7204 x + 18,047$ with a value of significance 0,028. Increasing the proportion of drug load reduction effect on the dissolution of curcumin.

Keywords: isolate turmeric rhizome extract, guar gum, solid dispersion, vacuum drying, dissolution