

INTISARI

Kurkumin adalah salah satu kandungan utama dalam ekstrak temulawak (*Curcuma xanthorrhiza* Roxb.) yang telah diketahui aktivitasnya farmakologisnya sebagai antioksidan, antiinflamasi, antimikrobia, dan antikanker. Penggunaan kurkumin dalam dunia farmasi telah dilakukan dan ditemui permasalahan yaitu kelarutannya yang rendah di dalam air. Penelitian ini dilakukan untuk melihat pengaruh proporsi *drug load* pada dispersi padat kurkumin ekstrak temulawak (*Curcuma xanthorrhiza* Roxb.) dalam polimer polivinil pirolidon (PVP K30) yang dibuat dengan instrumen *vaccum rotary evaporator* sebagai usaha untuk meningkatkan kelarutan kurkumin dalam air.

Ekstrak temulawak yang mengandung kurkumin didispersi padat dengan pembawa polimer PVP K30 dengan *vaccum rotary evaporator*. Dispersi padat ekstrak dibuat pada 3 formula, yaitu formula SD F1 dengan perbandingan ekstrak temulawak : PVP K30 (1:1), SD F2 dengan perbandingan ekstrak temulawak : PVP K30 (1:2), dan SD F3 dengan perbandingan ekstrak temulawak : PVP K30 (1:4). Diperoleh dispersi padat yang kemudian dibuat dalam sediaan kapsul. Uji disolusi dilakukan pada semua variasi *drug load*. Sampel diambil pada waktu 5, 10, 20, 30, 45, 60, dan 120 menit. Analisis sampel dilakukan dengan metode KLT-densitometri untuk melihat kadar kurkumin dan didapatkan persentase kurkumin yang terdisolusi. Analisis data dilakukan dengan menghitung Disolusi Efisiensi (DE) masing-masing formula dan diuji statistik dengan metode *Anova* dan *post hoc* dengan uji T.

Hasil uji disolusi menunjukkan adanya perbedaan profil disolusi antar formula ditunjukkan dengan hasil disolusi efisiensi. Formula SD F3 memiliki disolusi efisiensi paling tinggi dengan 78.86% diikuti formula SD F2 69.44% dan SD F1 39.70%.

Kata Kunci: Disolusi, Kurkumin Ekstrak Temulawak (*Curcuma xanthorrhiza*), PVP K30, Dispersi Padat, *Drug Load*, *Vaccum Rotary Evaporator*

ABSTRACT

Curcumin is one of the main content in the extract of curcuma (*Curcuma xanthorrhiza* Roxb.) which has pharmacological activity as an antioxidant, anti-inflammatory, antimicrobial, and anticancer. The use of curcumin in the pharmaceutical world has been known and the problem encountered is their low solubility in water. This study was conducted to obtain the effect on the proportion of drug-loaded solid dispersion of curcumin extract of curcuma (*Curcuma xanthorrhiza* Roxb.) in the polymer polyvinyl pyrrolidone (PVP K30) that were made with a rotary vacuum evaporator instruments in an effort to increase the solubility of curcumin in water.

Curcuma extract containing curcumin was solid dispersed with PVP K30 as carrier using a rotary vacuum evaporator. Extract solid dispersions were made on 3 formula, the formula F1 with extract ratio: PVP K30 (1:1), F2 with extract ratio: PVP K30 (1:2), and F3 with extract ratio: PVP K30 (1: 4). Solid dispersion obtained was then made in the capsule. Dissolution test was performed on all drug load variations. Samples were taken at 5, 10, 20, 30, 45, 60, and 120 minutes. Sample analysis was conducted using TLC-densitometry to obtain the levels of dissolved curcumin and dissolved percentage were obtained. Data analysis was performed by calculating the Dissolution Efficiency (DE) of each formula and statistically tested by Anova and T test post hoc methods.

The dissolution test results showed a difference in dissolution profiles inter the formula in terms dissolution efficiency. Formula SD F3 had the highest value 78.86%, followed by the formula SD F2 69.44%, and SD F1 39.70%.

Keywords: Dissolution, Curcumin Extract Curcuma (*Curcuma xanthorrhiza* Roxb.), PVP K30, Solid Dispersion, Drug Load, Vacuum Rotary Evaporator