

PERBEDAAN PROFIL DISOLUSI KURKUMIN DALAM SISTEM DISPERSI PADAT EKSTRAK KUNYIT (*Curcuma longa* L.) – POLIVINIL ALKOHOL (PVA) DENGAN VARIASI *DRUG LOAD*

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ABSTRAK

Kurkumin termasuk dalam BCS kelas II di mana kecepatan disolusi menjadi *rate determining step* dalam bioavailabilitas oral. Upaya peningkatan disolusi kurkumin dengan metode dispersi padat penting dilakukan dalam meningkatkan bioavailabilitas oral. Tujuan dari penelitian ini untuk mengetahui adanya perbedaan profil disolusi kurkumin dalam sistem dispersi padat ekstrak kunyit-polivinil alkohol (PVA) dengan variasi *drug load* 10%, 20%, dan 30%.

Metode yang digunakan untuk membuat dispersi padat adalah *solvent evaporation*. Pada penelitian ini parameter yang diukur yaitu *drug load*, kelarutan, dan disolusi. Analisis sampel dilakukan dengan spektrofotometer Visibel. Hasil uji kadar kurkumin didapatkan rata-rata perolehan kembali sebesar 91,33%-108,84% . Pada uji kelarutan didapatkan peningkatan kelarutan sampai 15,3x. Pada uji disolusi didapatkan rata-rata % disolusi sebesar 33,96%-102,20%

Hasil penelitian menunjukkan sistem dispersi padat ekstrak kunyit-PVA mampu meningkatkan disolusi kurkumin dibandingkan campuran fisik dan terdapat perbedaan profil disolusi kurkumin antar *drug load* 10, 20 dan 30% (*p value* < 0,05). *Drug load* 10% menunjukkan disolusi efisiensi paling tinggi sebesar 50,44±12,60%.

Kata kunci: kurkumin, ekstrak kunyit, disolusi, dispersi padat, polivinil alkohol, *solvent evaporation*.

**THE DIFFERENCE OF CURCUMIN DISSOLUTION PROFILE IN
TURMERIC EXTRACT (*Curcuma longa* L.) – POLYVINYL ALCOHOL
(PVA) SOLID DISPERSION SYSTEMS WITH VARIANCE OF DRUG LOAD**

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ABSTRACT

Curcumin is included in BCS Class II where the dissolution rate is rate determining step in oral bioavailability. Enhancement of curcumin dissolution with solid dispersion method are important in improving oral bioavailability. This study aims to determine the difference of curcumin dissolution profile in turmeric extract – polyvinyl alcohol (PVA) solid dispersion systems with variance of drug load 10%, 20%, and 30%.

Method used to make solid dispersion is solvent evaporation. In this study, the parameters measured are drug load, solubility, and dissolution. Sample analysis was performed by Visible spectrophotometer. The results of % recovery in curcumin content are 91,33%-108,84%. In solubility test showed that it can increasing solubility until 15,3x. At dissolution test, the results of %dissolution are 33,96%-102,20%.

The results showed that turmeric extract-PVA solid dispersion system can increase curcumin dissolution compared to the physical mixture and there are some differences on curcumin dissolution profile on each drug load (p value < 0,05). The 10% drug load of turmeric extract showed the highest dissolution efficiency value of $50,44 \pm 12,60\%$.

Keywords : curcumin, turmeric extract, dissolution, solid dispersion, polyvinyl alcohol, solvent evaporation