

INTISARI

SARI, EVP., 2016, OPTIMASI PROPORSI *FAST DISINTEGRATING TABLET* PIROKSIKAM DENGAN KOMBINASI *SUPERDISINTEGRANT* EXPLATAB[®] DAN BAHAN *EFFERVESCENT* DENGAN METODE *SIMPLEX LATTICE DESIGN*, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Fast Disintegrating Tablet (FDT) merupakan salah satu inovasi dalam teknologi farmasi, yaitu tablet terdisintegrasi cepat kurang dari 1 menit tanpa bantuan air. Piroksikam merupakan obat dosis kecil (10-20 mg/hari) yang termasuk dalam BCS kelas II, dengan mekanisme kerja menghambat enzim siklooksigenase (*COX-2*) pada pengobatan rematoid arthritis dan osteoarthritis. Penelitian ini bertujuan mengetahui pengaruh kombinasi *superdisintegrant* Explotab[®] dengan komponen *effervescent* terhadap sifat fisik dan kecepatan disolusi FDT piroksikam.

FDT piroksikam dengan metode *Simplex Lattice Design* dibuat 3 formula dengan berbagai perbandingan *superdisintegrant* Explotab[®] : komponen *effervescent* yaitu F1 (0%:100%), F2 (50%:50%) dan F3 (100%:0%). Penentuan formula optimum menggunakan *software Design Expert*[®] 6.0.8 dengan titik kritis kekerasan, kerapuhan, waktu pembasahan, waktu hancur *in vitro*; *in vivo*, disolusi Q₁;DE₅ dan tanggap rasa. Analisis formula optimum hasil prediksi *software* dan hasil percobaan dibandingkan dengan menggunakan program SPSS *One Sample t-test*.

Kombinasi *superdisintegrant* Explotab[®] dengan komponen *effervescent* (as.sitrat:na.bikarbonat) meningkatkan kekerasan, kerapuhan, waktu hancur *in vitro* dan waktu hancur *in vivo* tetapi menurunkan waktu pembasahan, waktu disolusi Q₁ dan DE₅ tablet dengan tanggap rasa manis F1 95%, F2 45% dan F3 90%. Hasil penelitian menunjukkan formula optimum FDT piroksikam dengan proporsi *superdisintegrant* Explotab[®] 39,64% dan komponen *effervescent* 60,36%. Hasil analisis formula optimum tidak ada perbedaan bermakna antara prediksi *software* dengan hasil percobaan $p > 0,05$.

Kata kunci : *Fast Disintegrating Tablet* Piroksikam, Explotab[®], *Effervescent*, *Simplex Lattice Design*

ABSTRACT

SARI, EVP., 2016, PROPORTION OF OPTIMIZATION FAST DISINTEGRATING TABLETS PIROXICAM SUPERDISINTEGRANT EXPLOTAB[®] COMBINED WITH MATERIALS EFFERVESCENT AND METHODS SIMPLEX LATTICE DESIGN, SKRIPSI, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA

Fast Disintegrating Tablet (FDT) is one of the innovations in pharmaceutical technology, the rapid disintegration of tablet is less than one minute without water. Piroxicam a small dose medication (10-20mg/day) were included in the BCS class II, with the mechanism action of inhibiting the enzyme cyclooxygenase (COX-2) in the treatment of rheumatoid arthritis and osteoarthritis. This study aims to determine the effect combination superdisintegrant Explotab[®] with effervescent component toward physical properties and dissolution of FDT piroxicam.

FDT piroxicam with Simplex Lattice Design method created three formulas with multiple comparison superdisintegrant Explotab[®]:effervescent component; F1(0%:100%), F2(50%:50%) and F3(100%:0%). Determining the optimum formula using Design Expert[®] 6.0.8 software with critical point hardness, friability, upon wetting, disintegration time in vitro;in vivo, dissolution Q₁;DE₅ and response tester. Analysis software optimum formula predicted and the experimental result were compared using SPSS One Sample t-test.

Superdisintegrant Explotab[®] with effervescent component (citrat.acid:sod.bicarbonat) combination increases the hardness, friability, disintegration time in vitro and disintegration time in vivo, however reduce the wetting time, dissolution time Q₁ and DE₅ tablet with a response taste F1 95%, F2 45% and F3 90% sweetness. The result showed optimum formula FDT piroxicam proportion of superdisintegrant Explotab[®] 39,64% and effervescent components 60,36%. The result of optimum formula was not significantly different between the prediction software with the experimental result $p > 0,05$.

Key words : Fast Disintegrating Tablet Piroxicam, Explotab[®], Effervescent, Simplex Lattice Design