

INTISARI

SETIANINGSIH, R., 2016 OPTIMASI PROPORSI FAST DISINTEGRATING TABLET PIROKSIKAM DENGAN KOMBINASI SUPERDISINTEGRANT CROSCARMELOSE SODIUM (AC-DI-SOL) DAN BAHAN EFFERVESCENT DENGAN METODE SIMPLEX LATTICE DESIGN, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Piroksikam merupakan Obat Anti Inflamasi Non Steroid yang memiliki khasiat pengobatan *rheumatoid arthritis*, *osteoarthritis* dan nyeri. Piroksikam dibuat *fast disintegrating tablet* untuk mempercepat waktu hancur dan memberikan rasa enak. Tujuan penelitian untuk mengetahui konsentrasi dan pengaruh kombinasi *superdisintegrant Ac-Di-Sol* dan komponen *effervescent* terhadap sifat fisik dan pelepasan obat.

Penelitian menggunakan metode *Simplex Lattice Design* dengan kombinasi *superdisintegrant Ac-Di-Sol* dan komponen *effervescent* yang dibuat 3 formula. Formula I 100% *Ac-Di-Sol* : 0% *Effervescent*, Formula II 50% *Ac-Di-Sol* : 50% *Effervescent* dan Formula III 0% *Ac-Di-Sol* : 100% *Effervescent*. Parameter titik kritis meliputi kekerasan, kerapuhan, waktu pembasahan, waktu hancur *in vitro*, waktu hancur *in vivo*, Q_1 dan DE_5 . Hasil titik kritis dimasukkan program *Design Expert 8.0.6* untuk mendapatkan formula optimum.

Hasil penelitian menunjukkan peningkatan *Ac-Di-Sol* meningkatkan kekerasan, kerapuhan dan menurunkan waktu pembasahan, waktu hancur *in vitro*, waktu hancur *in vivo*, Q_1 dan DE_5 . Peningkatan *effervescent* meningkatkan kekerasan, waktu pembasahan, waktu hancur *in vitro*, waktu hancur *in vivo*, Q_1 , DE_5 dan menurunkan kerapuhan. Kombinasi kedua komponen meningkatkan waktu hancur *in vivo* dan menurunkan nilai kekerasan, kerapuhan, waktu pembasahan, waktu hancur *in vitro*, Q_1 dan DE_5 . Metode *Simplex Lattice Design* menghasilkan formula optimum dengan perbandingan *superdisintegrant Ac-Di-Sol* 9,17 % dan komponen *effervescent* 90,83 %.

Kata kunci : *fast disintegrating tablet* (FDT) piroksikam, *Ac-Di-Sol*, *effervescent*, *Simplex Lattice Design*

ABSTRACT

SETIANINGSIH, R., 2016 OPTIMIZATION OF PIROXICAM FAST DISINTEGRATING TABLET PROPORTION WITH COMBINATION OF SUPERDISINTEGRANT CROSCARMELLOSE SODIUM (AC-DI-SOL) AND EFFERVESCENT MATERIAL SIMPLEX LATTICE DESIGN METHOD, THESIS, FACULTY OF PHARMACY, UNIVERSITY SETIA BUDI, SURAKARTA.

Piroxicam is a Non Steroid Anti-Inflammatory Drugs have the efficacy of treatment of rheumatoid arthritis, osteoarthritis and pain. Piroxicam made fast disintegrating tablet to accelerate the disintegration time and give good taste. The aim of research is to determine the concentration and the effect of the combination of superdisintegrant Ac-Di-Sol and effervescent component on the physical properties and drug release.

Research using Simplex Lattice Design with a combination of superdisintegrant Ac-Di-Sol and effervescent component made 3 formula. Formula I 100% Ac-Di-Sol : 0% effervescent, Formula II 50% Ac-Di-Sol : 50% effervescent, Formula III 0% Ac-Di-Sol : 100% effervescent. Parameter tipping points include hardness, friability, upon wetting, disintegration time in vitro, in vivo disintegration time, Q1 and DE5. The result included a critical point 8.0.6 Design Expert program to get the optimum formula.

The result showed an increase in Ac-Di-Sol increases hardness, friability and down time of the wetting, disintegration time in vitro, in vivo disintegration time, Q1 and DE5. Increased effervescent increasing violence, upon wetting, disintegration time in vitro, in vivo disintegrationtime, Q1, DE5 and lower brittleness. The combination of these two components are increase the in vivo disintegration time and lower the hardness, friability, upon wetting, disintegration time in vitro, Q1 and DE5. Simplex Lattice Design method produces the optimum formula by comparison superdisintegrant Ac-Di-Sol 9,17% and 90,83 effervescent component.

Key words : fast disintegrating tablet (FDT) piroxicam, Ac-Di-Sol, Effervescent, Simplex Lattice Design.