INTISARI

PRASETYO, STB., 2016, OPTIMASI FDT NIFEDIPIN YANG TERDISPERSI PEG 6000 DENGAN KOMBINASI *SUPERDISINTEGRANT CROSSPOVIDONE* DAN KOMPONEN *EFFERVESCENT* DENGAN METODE *FACTORIAL DESIGN*, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Nifedipin adalah adalah obat pemblok saluran kalsium. Nifedipin merupakan obat yang susah larut dalam air dan merupakan obat golongan BCS kelas 2. Keterbatasan dari senyawa ini dapat diatasi dengan cara membuat sediaan *fast disintegrating tablet* yang telah terdispersi PEG 6000. Tujuan penelitian ini adalah untuk mengoptimasi kombinasi *superdisintegrant crosspovidone* dan komponen *effervescent* terhadap mutu fisik dan pelepasan obat dari nifedipin dengan menggunakan metode *factorial design.*

Metode pembuatan *fast disintegrating tablet* nifedipin yang terdispersi PEG 6000 menggunakan metode kempa langsung. Proses optimasi dilakukan dengan menggunakan metode optimasi *factorial design*, dengan faktor yaitu *crosspovidone* dan komponen *effervescent.* Tablet yang dihasilkan diuji mutu fisik granul, mutu fisik tablet, dan pelepasan obat. Hasil akan dianalisis menggunakan *Design Expert 6.0.8 trial version* berdasarkan titik kritis kekerasan, kerapuhan, waktu hancur *in-vitro,* waktu hancur *in-vivo,* waktu pembasahan, uji tanggap rasa dan jumlah obat terlepas selama 1 menit.

Hasil penelitian menunjukkan bahwa kombinasi c*rosspovidone* dan komponen *effervescent* menghasilkan kekerasan 3,7 kg, waktu hancur *in-vitro* 9,66 detik, kerapuhan 0,72%, *wetting time* 34,16 detik, waktu hancur *in-vivo* 10,75 detik, Q_1 63,54%, D_{E30} 70,06% dan rasa yang sedang. Berdasarkan hasil optimasi *superimposed counter plot* diperoleh formula optimum *fast disintegrating tablet* nifedipin yang terdispersi PEG 6000 dengan kombinasi superdisintegrant *crosspovidone* sebesar 2,58% dan komponen *effervescent* sebesar 3%.

Kata kunci : FDT nifedipin yang terdsipersi PEG 6000, *crosspovidone*, komponen *effervescent, factorial design*.

ABSTRACT

PRASETYO, STB., 2016, OPTIMIZATION FDT NIFEDIPINE DISPERSED PEG 6000 COMBINED WITH SUPERDISINTEGRANT CROSSPOVIDONE AND EFFERVESCENT METHOD BY USING FACTORIAL DESIGN, THESIS, FACULTY OF PHARMACY, UNIVERSITY OF SETIA BUDI, SURAKARTA.

Nifedipine is a calcium channel blocker. Nifedipine is a drug that is poorly soluble in water and is a class of drugs known as BCS 2. Limitations of this compound can be overcome by making the preparation of *fast disintegrating tablet* that has been dispersed PEG 6000. The purpose of this study was to optimized the combination of superdisintegrant crosspovidone and effervescent component of the quality of physical and drug release of nifedipine by using a factorial design method.

The method of making fast disintegrating tablet nifedipine dispersed PEG 6000 using direct compression method. The optimization process is done by using a factorial design optimization methods, with factors such as crosspovidone and effervescent component. The resulting tablets were tested physical quality granule, tablet physical quality, and drug release. Results will be analyzed using *Design Expert 6.0.8 trial version* based on the critical point of hardness, friability, disintegration time in-vitro, in-vivo disintegration time, wetting time, taste test response and the amount of drugs apart for 1 minute.

The results showed that combination of crosspovidone and effervescent component produced hardness 3,7 kg, disintegration time *in-vitro* 9,66 sec, friability 0,72%, *wetting time* 34,16 sec, disintegration time *in-vivo* 10,75 sec, Q_1 63,54%, D_{E30} 70,06% and given moderate taste. Superimposed optimization based on the results obtained optimum formula counter plot FDT nifedipine dispersed PEG 6000 with a combination of 2.58% crosspovidone superdisintegrant and effervescent component by 3%.

Keyword : *fast disintegrating tablet* that has been dispersed PEG 6000, *crosspovidone, effervescent, factorial design*.