INTISARI

YANTI, W,I., 2016, OPTIMASI *ORALLY DISINTEGRATING TABLETS* (ODTs) KETOPROFEN MENGGUNAKAN *SUPERDISINTEGRANT CROSPOVIDONE* DAN KOMPONEN *EFFERVESCENT* DENGAN METODE *FACTORIAL DESIGN*, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Ketoprofen merupakan derivat dari asam propionat digunakan untuk anti inflamasi non steroid antipiretik dan analgesik. Berdasarkan *Biopharmaceutics Classification System* (BCS) ketoprofen termasuk kelompok obat BCS kelas II, obat yang memiliki kelarutan rendah akan mengakibatkan laju disolusinya juga rendah sehingga absorbsinya kurang sempurna dan memiliki bioavailabilitas yang rendah pula. *Orraly Disintegrating Tablets (ODTs)* diketahui dapat hancur atau melarut secara cepat dalam saliva tanpa membutuhkan air yang selanjutnya diharapkan dapat memberikan efek terapi dalam waktu yang lebih cepat. Penelitian ini bertujuan untuk mengoptimasi pengaruh kombinasi *crospovidone* dan komponen *effervescent* yang memiliki fungsi sebagai bahan penghancur terhadap sifat fisik tablet dan pelepasan obat dengan metode *factorial design.*

Penelitian dilakukan menggunakan metode optimasi *factorial design* 2^2, dengan faktor yaitu *crospovidone* dan komponen *effervescent*. Tablet dibuat dengan metode kempa langsung dan dilakukan pengujian terhadap sifat fisik serbuk dan tablet serta pelepasan obat. Penentuan formula optimum dengan *superimposed counterplot* menggunakan *Design Expert 8.0.6 trial version* berdasarkan parameter kekerasan, kerapuhan, waktu hancur *in vitro* dan *in vivo*, waktu pembasahan, dan jumlah obat yang dilepaskan selama 1 menit.

Hasil penelitian menunjukkan bahwa komponen *effervescent* berpengaruh lebih dominan terhadap penurunan waktu hancur dan jumlah pelepasan obat dari tablet ketoprofen dibandingkan *crospovidone*. Berdasarkan *superimposed counter plot* diperoleh formula optimum tablet dengan *crospovidone* sebesar 4,00 mg dan komponen *effervescent* sebesar 5,65 mg.

Kata kunci : Ketoprofen, ODTs, *crospovidone*, komponen *effervescent*, *factorial design.*

ABSTRACT

YANTI, W.I., 2016, OPTIMAZATION KETOPROFEN ORALLY DISINTEGRATING TABLETS (ODTs) USING SUPERDISINTEGRANT CROSPOVIDONE AND EFFERVESCENT COMPONENTS WITH FACTORIAL DESIGN METHOD, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Ketoprofen is a propionate acid derivate use to treatment of non-steroid anti inflammatory drugs (NSAIDs) analgetic, antipirettan and anti-inflammatory. According to the Biopharmaceutics Classification System (BCS) ketoprofen is included in second classes drug which have low solubility and high permeability, Ketoprofen, is very insoluble in water causes a low dissolution rate, dissolution rate is a limiting factor the rate of drug absorption and have low bioavailability. The orraly disintegrating tablets (ODTs) ketoprofen will disintegrate or dissolve rapidly in the saliva without the need for water and furthermore it was intended to give rapid therapeutic action. This research purposed to optimize the influence of combination crospovidone and effervescent components which have function as disintegrant, toward physical properties and drug release with factorial design method.

Orally disintegrating tablets were prepared by direct compression method and it was evaluated for physical properties of powder and tablet, and drug release. Optimization the formula was carried out by 2^2 factorial design method with crospovidone and effervescent component as independent variables. Optimum formula was determined by superimposed counter plot using sofware Design Expert 8.0.6 trial version based on tablets properties i.e hardness, friability, disintegration time in vitro and in vivo, wetting time, and amount of drug release during 1 minute.

This research was found that effervescent components was the most dominant factor had an affect on disintegration time and amount of drug release than crospovidone. Enhancement effervescent components affected on increase disintegration time of tablet and decrease amount of drug release. Based on superimposed counter plot, optimum formula was achieved with combination crospovidone 4,00 mg and effervescent components 5,65 mg.

Keywords : Ketoprofen, ODTs, crospovidone, effervescent components, factorial design.