INTISARI

LAILIYAH, M., 2015, PENGEMBANGAN FORMULA *FAST DISINTEGRATING TABLET* DOMPERIDON DALAM KOMPLEKS INKLUSI β-SIKLODEKSTRIN DENGAN *SUPER DISINTEGRANTS CROSPOVIDONE*, *FILLER BINDER* AVICEL PH102, DAN PEMANIS SORBITOL. TESIS FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Domperidon merupakan antagonis reseptor dopamin–2 yang digunakan sebagai antiemetik. Formulasi domperidon dalam sediaan *fast disintegrating tablet* domperidon dalam kompleks inklusi β-siklodekstrin merupakan alternatif yang tepat untuk meningkatkan kenyamanan dengan rasa yang menyenangkan dan cepat hancur di mulut. Penelitian ini bertujuan mengoptimasi dan mengevaluasi pengaruh *crospovidone*, Avicel PH102 dan sorbitol terhadap *wetting time*, waktu hancur, kerapuhan, kekerasan, rasa dan pelepasan obat pada *fast disintegrating tablet* domperidon dalam kompleks inklusi β–siklodekstrin.

Metode *simplex lattice design* diaplikasikan untuk mengoptimasi *fast disintegrating tablet* domperidon dalam kompleks inklusi β-siklodekstrin. Menggunakan variabel *crospovidone*, Avicel PH102 dan sorbitol sebagai variabel bebas. Daerah optimum ditentukan dengan *superimposed contour plot* dari *wetting time*, waktu hancur, kerapuhan, kekerasan, jumlahobat yang terlepas pada menit 1 dan *dissolution efficiency* menggunakan *software Design Expert*.

Hasil menunjukkan variabel *crospovidone* sebagai *super disintegrant* berpengaruh terhadap penurunan waktu hancur, *wetting time*, dan pelepasan obat. Peningkatan Avicel PH102 dapat membantu proses *wicking* sehingga menurunkan waktu hancur jika dikombinasi dengan *crospovidone*. Peningkatan jumlah sorbitol meningkatkan mutu rasa, dan kekerasan serta menurunkan kerapuhan. Interaksi antara Avicel PH102 dan sorbitol, *crospovidon*e dan sorbitol serta interaksi antara ketiga variabel menurunkan *wetting time*, waktu hancur, kerapuhan, meningkatkan kekerasan dan pelepasan obat. Diperoleh formula *fast disintegrating tablet* domperidon dalam kompleks inklusi β–siklodekstrin pada daerah optimum pada rentang *crospovidone* 4–6,4 mg, Avicel PH102 42–54 mg dan sorbitol 80–94 mg.

Kata kunci : *crospovidone*, Avicel PH102, sorbitol, *fast disintegrating tablet* domperidon dalam kompleks inklusi β–siklodekstrin.

ABSTRACT

LAILIYAH, M., 2015. DEVELOPMENT OF FORMULATION OF DOMPERIDONE IN β-CYCLODEXTRIN INCLUSION COMPLEX FAST DISINTEGRATING TABLET USING CROSPOVIDONE AS SUPERDISINTEGRANT, AVICEL PH 102 AS FILLER-BINDER AND SORBITOL AS SWEETENING AGENT. POST GRADUATE THESIS. FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY.

Domperidone is anantagonist dopamine-2 receptor that has been used as antiemetic. Formulation of domperidone in fast disintegrating tablet using inclusion complex with β-cyclodextrin is an appropriate alternative to enhance the palatability and disintegrate rapidly in the mouth. This research aimed to optimize and evaluate the influence of crospovidone, Avicel PH 102 and sorbitol on disintegration time, friability, hardness, palatability and drug release of domperidone fast disintegration tabletusing inclusion complex with β-siklodekstrin.

Simplex lattice design method was applied to optimize fast disintegrating tablet of domperidone in inclusion complex with β-cyclodextrin. Crospovidone, Avicel PH102 and sorbitol were used as independent variable. The optimum area was determined using superimposed contour plot of combination of disintegration time, wetting time, friability, hardness, the amount of drug released at 1 minute and dissolution efficiency using Design Expert software.

The results showed that crospovidone as superdisintegrant affected on reducing disintegration time, wetting time and drug release. Enhancement of Avicel PH 102 aid the wicking process thus reduced the disintegration time if combined with crospovidone. Enhancement of sorbitol concentration increased the mouth feel and hardness, and reduced the friability. Interaction between Avicel PH102 and sorbitol, crospovidone and sorbitol, and interaction of three variables reduced the wetting time, disintegration time, and friability, moreover increased the hardness and drug release. The optimum area of domperidone in β-cyclodextrin inclusion complex fast disintegration tablet was in range 4 – 6.4 mg of crospovidone, Avicel PH102 42 – 52 mg and sorbitol 80 – 94 mg.

Key words: *crospovidone*, Avicel PH102, sorbitol, fast disintegrating tablet using inclusion complex with β-cyclodextrin