

INTISARI

Penelitian tentang optimasi formula granul lepas lambat teofilin dengan penyalut Eudragit[®] E 100 dan guar gum: aplikasi metode desain faktorial telah dilakukan. Penelitian bertujuan untuk mengetahui faktor Eudragit[®] E 100, guar gum, atau interaksinya yang dominan mempengaruhi laju alir granul, kandungan lembab granul, dan % kumulatif teofilin terdisolusi pada granul lepas lambat teofilin, serta mengetahui area komposisi optimum campuran bahan penyalut Eudragit[®] E 100 dan guar gum yang dapat menghasilkan laju alir granul, kandungan lembab granul dan % kumulatif teofilin terdisolusi yang dikehendaki.

Penelitian ini merupakan penelitian eksperimental murni menggunakan desain faktorial. Kategori respon yang diharapkan yaitu laju alir granul, kandungan lembab granul dan % kumulatif teofilin terdisolusi. Berdasarkan rumus desain faktorial $Y = B_0 + B_1 (A) + B_2 (B) + B_{12} (A) (B)$ dapat dibuat *contour plot* laju alir granul, kandungan lembab granul, dan % kumulatif teofilin terdisolusi.

Dari hasil pengolahan data diketahui bahwa faktor dominan dalam mempengaruhi laju alir granul adalah guar gum, sedangkan Eudragit[®] E 100 merupakan faktor dominan dalam mempengaruhi kandungan lembab granul % kumulatif teofilin terdisolusi. Dari *contour plot superimposed* diperoleh area komposisi optimum yang menghasilkan laju alir granul, kandungan lembab granul, dan % kumulatif teofilin terdisolusi yang dikehendaki.

Kata kunci : teofilin, Eudragit[®] E 100, guar gum, kapsul lepas lambat, desain faktorial

ABSTRACT

The Research concerning the optimization formula of the prolonged release theophylline granule with Eudragit[®] E 100 and guar gum as film coating: factorial design application has been carried out. The research aimed at knowing the dominant factor and the influence of optimum composition area of Eudragit[®] E 100 and guar gum as coating agent, which could be result in granule's flow rate, granule's moisture concentration, and % cumulative theophylline dissolved desirable.

This research was pure experimental study with factorial design. The respond category preferred were granule's flow rate, granule's moisture concentration, and % cumulative theophylline dissolved. Based on factorial design formula $Y = B_0 + B_1 (A) + B_2 (B) + B_{12} (A) (B)$ could be made the contour plot of granule's flow rate, granule's moisture concentration, and % cumulative theophylline dissolved.

From the data analysis obtained that dominant factor which influenced of granule's flow rate was guar gum, whereas Eudragit[®] E 100 was the dominant factor that influenced granule's moisture concentration and % cumulative theophylline dissolved. From the contour plot superimposed was known the optimum composition of Eudragit[®] E 100 and guar gum which could be result the granule's flow rate, granule's moisture concentration, and % cumulative theophylline dissolved desirable.

Key words : theophylline, Eudragit[®] E 100, guar gum, prolonged release capsule, factorial design