

INTISARI

Levofloksasin diabsorpsi dengan cepat dan hampir sempurna dalam lambung. Berdasarkan sifat absorpsi yang baik dalam lambung, levofloksasin dapat dibuat dalam bentuk sediaan lepas lambat *gastroretentive floating* tablet. Penelitian ini bertujuan untuk mengetahui pengaruh kombinasi matriks HPMC K100M[®] dengan CMC-Na terhadap karakteristik tablet yang dihasilkan, serta untuk mengetahui formula optimum tablet *floating* levofloksasin.

Formula dibuat berdasarkan metode *simplex lattice design* menggunakan *software Design Expert*[®] 11. Parameter yang digunakan untuk optimasi adalah *swelling index*, *floating lag time*, L_{90} , L_{180} , dan L_{360} . Formula optimum didapatkan dengan menganalisis parameter yang dipengaruhi secara signifikan oleh perbedaan konsentrasi polimer dengan optimasi *numerical* dan diverifikasi menggunakan *software IBM SPSS statistics 25* metode *one sample t-test*.

Peningkatan kadar HPMC K100M memberikan pengaruh signifikan pada peningkatan kekerasan tablet, *swelling index*, serta *floating lag time*. Peningkatan kadar CMC-Na memberikan pengaruh signifikan pada peningkatan kecepatan alir granul, kerapuhan tablet, L_{90} , L_{180} , L_{360} serta menurunkan *floating lag time*. Kombinasi HPMC K100M dengan konsentrasi 15% b/b dan CMC-Na 20% b/b terhadap bobot tablet dapat memberikan sifat fisik tablet *floating* levofloksasin yang optimum.

Kata kunci: Levofloksasin, optimasi, tablet *floating-gastroretentive*, HPMC, CMC-Na

ABSTRACT

Levofloxacin is absorbed quickly and almost perfectly in the stomach. Based on the good absorption properties in the stomach, levofloxacin can be made in dosage forms off the slow gastroretentive floating tablet. This study aims to determine the effect of the combination of HPMC K100M[®] matrix and CMC-Na on the characteristics of the tablets produced, and to determine the optimum formula for floating tablet levofloxacin.

The formula is based on the simplex lattice design method using Design Expert[®] 11 software. The parameters used for optimization are swelling index, floating lag time, L90, L180, and L360. The optimum formula was obtained by analyzing parameters that were significantly affected by differences in polymer concentration with numerical optimization and verified using IBM SPSS statistics software 25 methods of one sample t-test.

Increased levels of K100M HPMC have a significant effect on increasing tablet hardness, swelling index, and floating lag time. Increased levels of CMC-Na have a significant effect on increasing granule flow speed, fragility of tablets, L90, L180, L360 and decreasing floating lag time. The combination of HPMC K100M with a concentration of 15% b / b and CMC-Na 20% b / b to the weight of tablets can provide optimum physical properties of levofloxacin floating tablets.

Keywords : *Levofloxacin, optimization, floating-gastroretentive tablet, HPMC, CMC-Na*