INTISARI

SARI, C. N., 2013, OPTIMASI TABLET LEPAS LAMBAT IBUPROFEN DENGAN MATRIKS HPMC K4M DAN Na CMC SECARA *SIMPLEX LATTICE DESIGN*, SKRIPSI, FAKULTAS FARMASI UNIVERSITAS SETIA BUDI, SURAKARTA

Ibuprofen merupakan obat antiinflamasi nonsteroid yang sering digunakan untuk menghilangkan rasa nyeri. Ibuprofen mempunyai waktu paro yang pendek yaitu sekitar 2 jam jadi pasien harus sering mengkonsumsinya sehingga bisa menyebabkan resiko lupa meminum obat. Efek samping dari ibuprofen adalah menyebabkan gangguan saluran cerna, apabila digunakan secara berulang-ulang dapat meningkatkan resiko efek samping tersebut. Oleh karena itu, ibuprofen cocok dibuat dalam sediaan lepas lambat. Berdasarkan hal tersebut, dilakukan penelitian tentang pembuatan tablet lepas lambat ibuprofen menggunakan matriks HPMC K4M dan Na CMC.

Penelitian ini dibuat berdasarkan metode *simplex lattice design* (SLD) dengan dua komponen matriks yaitu HPMC K4M dan Na CMC. Penelitian ini dibuat dalam tiga formula antara lain: FI (100% HPMC K4M), FII (50% HPMC K4M : 50% Na CMC), FIII (100% Na CMC). Tablet dibuat secara granulasi basah. Granul dan tablet yang terbentuk lalu diuji mutu fisik. Parameter yang digunakan untuk persamaan SLD adalah kecepatan alir, kekerasan, disolusi. Kemudian dihitung respon dari masing-masing persamaan sehingga diperoleh respon total untuk menentukan formula optimum. Hasil teoritis dan percobaan formula optimum dianalisis menggunakan uji t.

Hasil penelitian menunjukkan bahwa ibuprofen dapat dibuat sediaan lepas lambat, dan kombinasi matriks HPMC K4Mdan Na CMC. Formula optimum yang dihasilkan dalam penelitian ini adalah 60% HPMC K4M : 40% Na CMC.

Kata kunci : Ibuprofen, lepas lambat, HPMC K4M, Na CMC

ABSTRACT

SARI, C. N., 2013, OPTIMIZATION OF SUSTAINED RELEASE IBUPROFEN TABLET USING HPMC K4M AND Na CMC MATRIX BY SIMPLEX LATTICE DESIGN, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA

Ibuprofen is a nonsteroidal anti-inflammatory drugs which often used to relieve pain. Ibuprofen has a short half-life time about 2 hours so patients must often consume, so that it can lead to the risk of forgetting to take medicine. Side effect of ibuprofen is causing gastrointestinal disorders, so that when used repeatedly, it can increase the risk of side effects. Therefore, ibuprofen is a match made in a sustained-release preparation. Based on this, a study was conducted on the manufacture of sustained release ibuprofen tablet using HPMC K4M and Na CMC matrix.

This study was based on the simplex lattice design (SLD) method with two matrix components, namely HPMC K4M and Na CMC. The study was made in three formulas i.e. : FI (100% HPMC K4M), FII (50% HPMC K4M : 50% Na CMC), FIII (100% Na CMC). The tablets were made by wet granulation. The formed granules and tablets were tested their physical qualities. The parameters used for SLD equations were flow rate, hardness, dissolution. Then calculated the response of each equation so that the total response was obtained to determine the optimum formula. The results of theoretical and experimental, optimum formula were analyzed using t-test.

The results showed that ibuprofen could be made sustained release preparations, and the combination of HPMC K4M and Na CMC matrix. Optimum formula yielded in this study was 60% HPMC K4M : 40% Na CMC.

Keywords : Ibuprofen, sustained release, HPMC K4M, Na CMC