

## INTISARI

Levofloksasin merupakan antibiotik yang efektif mengobati infeksi pada lambung yang disebabkan oleh *Helicobacter pylori* yang dapat bertahan lama di lambung. Sediaan tablet *floating* levofloksasin dapat mengontrol pelepasan zat aktif dan memiliki efek lokal dan dapat bertahan di lambung. Tujuan penelitian ini adalah untuk mengoptimasi formula tablet *floating* levofloksasin dengan kombinasi matriks HPMC K100M<sup>®</sup> dan natrium alginat.

Tablet *floating* levofloksasin ini dibuat dengan metode granulasi basah menggunakan kombinasi matriks HPMC K100M<sup>®</sup> dan natrium alginat dalam berbagai konsentrasi. Formula dirancang menggunakan metode *Simplex Lattice Design*, sehingga diperoleh *run* sebanyak 8. Data dari uji sifat fisik tablet meliputi kekerasan, kerapuhan, keragaman bobot, penetapan kadar, *swelling index*, *floating lag time*, dan uji disolusi tablet. Data hasil uji dianalisis dengan *software Design Expert*<sup>®</sup> 11 sehingga diperoleh formula optimum. Verifikasi formula optimum dilakukan menggunakan *software IBM SPSS Statistic* dengan metode *one-sample t-test*.

Hasil penelitian menunjukkan bahwa formula optimum tablet *floating* levofloksasin yang diperoleh adalah kombinasi matriks 19,15% HPMC K100M dan 15,85% natrium alginat. Semakin banyak HPMC K100M dapat meningkatkan *swelling index* dan *floating lag time*, sedangkan semakin banyak natrium alginat dapat mengontrol pelepasan obat. Kombinasi keduanya dapat meningkatkan menurunkan *floating lag time* dan mengontrol pelepasan obat.

**Kata kunci : *floating*, levofloksasin, HPMC, alginat**

## ABSTRACT

Levofloxacin is effective antibiotic for *Helicobacter pylori* infection in stomach. Floating tablet of levofloxacin could control the release of drugs and maintain prolonged period of time in the stomach. This study was conducted to get the optimum formula of floating tablet of levofloxacin with the combination of hydrophilic matrix HPMC K100M and sodium alginate.

Floating tablet of levofloxacin was prepared by wet granulation with the combination of matrix HPMC K100M and sodium alginate in various concentration. Tablet formula was designed by Simplex Lattice Design method, so that 8 runs of experiment were performed. Data from physical properties evaluation of tablet include hardness, friability, weight variation, assay, swelling index, floating lag time and dissolution. The responses were analyzed by Design Expert® 11 software so the optimum formula was obtained. Verification was done by comparing the value of optimum formula and the prediction result using one sample t-test in IBM SPSS Statistic software.

The obtained optimum formula in this study is the combination of HPMC K100M 19,15% and sodium alginate 15,85%. The higher concentration of HPMC K100M can increase swelling index and floating lag time, the higher concentration of sodium alginate can control the release of drug. The combination of both can decrease floating lag time, and controlled release of the drug.

**Keywords** : floating, levofloxacin, HPMC, alginate