

ABSTRACT

The Influence of the Mannitol Concentration on Physical Properties of Tablet and Release Profile of Ketoprofen from HPMC K100M Based Matrix

Ketoprofen is a non steroid anti inflammation drug which has an analgesic and antipiretics use. Sustained release formulation can be useful to reduce pain in *rheumatoid arthritis* dan *osteoarthritis*. A study to investigate the effect of manitol on ketoprofen release from sustained release tablets with HPMC K100M as a matrix was carried out. The tablets with various concentration of manitol 20%, 30%, and 40% were prepared by wet granulation method. The tablet were evaluated for physical characteristics including hardness, friability value and in vitro release of drug. The amount of drug release from tablet into dissolution medium was assayed by spectrophotometer UV. Dissolution test were carried out by USP dissolution apparatus 2 in dissolution medium which pH 6,8 at temperatur $37\pm 0,5^{\circ}\text{C}$, the result is analysed by statistics programme of SPSS using one way analysis of variance in 95% confidence interval.

The result showed that the physical properties of tablet was different for each formula. The addition of mannitol give the different hardness and friability for each formulas. The higher the concentration of mannitol added, the higher the hardness value is. The release profile showed that there is an increasing of the amount of drug release. All formulas indicate the drug was released by anomalous transport (non-Fickian Diffusion) and all formulas are following by combination of zero order and first order. This result indicate that the release of the tablet is dominated by diffusion and erosion mechanism.

Keyword : ketoprofen, HPMC K100M, mannitol, sustained release tablet.