

## ABSTRACT

### **The Influence Lactose Concentration on the Release Ketoprofen from Sustained Release Tablets with HPMC K15M as a Matrix**

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Ketoprofen is a non steroid anti inflammation drug which has an analgesic and antipiretics effects. Sustained release formulation can be useful to reduce pain in *rheumatoid arthritis* dan *osteoarthritis*. A study to investigate the effect of lactose on ketoprofen release from sustained release tablets with HPMC K15M as a matrix was carried out. The tablet were evaluated for physical characteristics including hardness, friability value and in vitro release of drug.

In this research there were four formulas with different lactose concentration. Formula 2, 3 and 4 contains 20%, 30% and 40%, respectively, while formula 1 as a control without lactose. Various amount of lactose as a diluent is to observe the significant difference in physical properties of granul include moisture content, flow rate, angle of repose and amount of fines, physical properties of tablet include hardness and friability value and dissolution rate.

Dissolution test were evaluated for eight hours carried out by USP dissolution apparatus 2 with phosphate bufer medium pH 6,8 at temperature  $37 \pm 0,5^{\circ}\text{C}$  and the result compared with Welling and analysed by statistics programme of SPSS using one way analysis of variance in 95% confidence interval

The result showed that the physical properties of granul and tablet was different for each formula. The release showed that F4 higher than F1, F2 and F3. Release ketoprofen improved from  $29,9 \pm 0,17$  to  $42,62 \pm 0,98$  8h ( $p < 0.05$ ), respectively F1 and F4. In order to kinetics profile, F1, F2 and F3 following first order reaction and F4 following zero order reaction. All formulas indicate the drugs was released by anomalous transport (*non-fickian diffusion*)

**Keyword** : Ketoprofen, HPMC K15M, Lactose, wet granulation method, Sustained release.