

KARAKTERISASI SEDIAAN DAN UJI PELEPASAN NATRIUM DIKLOFENAK DENGAN SISTEM MIKROEMULSI W/O DARI BASIS GEL CARBOMER 940

(Mikroemulsi W/O dengan Surfaktan Span 80-Tween 80 : Kosurfaktan Etanol 96% = 6:1)

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ABSTRACT

The aim of this study was to observe the characterization dosage form and release of diclofenac sodium with microemulsion w/o system from carbomer 940 gel base. Microemulsion contained ratio surfactant span80-tween80 and cosurfactant etanol 96% 6:1. Diclofenac sodium gel with emulsion was used as control. The evaluation included organoleptic, pH, spreadability, and also diclofenac sodium release test from gel base of each formula. Data from pH test, spreadability, and spread diameter of zero load, were evaluated based on independent sample t-test.

The result showed that microemulsion system in gel base (formula I) showed thicker consistency than emulsion in gel base (formula II). Microemulsion in base gel Carbomer 940 didn't have effect on pH but it had effect on spreadability and spread diameter of zero load. Data analyze showed that pH of formula I was $6,00 \pm 0,02$ and formula II was $5,97 \pm 0,03$. Spreadability of formula I was $0,0120 \pm 0,0020$ and formula II was $0,0480 \pm 0,0100$. Spread diameter of zero load for formula I was $4,97 \pm 0,50$ and formula II was $11,30 \pm 1,05$. Dissolution test was carried out with apparatus 5-paddle overdisk in phosphate buffer $7,4 \pm 0,05$, temperature 32°C , 100 rpm. The result of diclofenac sodium release study is flux. Flux is the cumulative amount of diclofenac sodium release per cm^2 per minute^{1/2}. The rate of diclofenac sodium release in formula I ($37,1185 \pm 0,2828 \mu\text{g}/\text{cm}^2/\text{menit}^{1/2}$) and formula II ($59,6518 \pm 1,89872828 \mu\text{g}/\text{cm}^2/\text{menit}^{1/2}$). It was analyzed by statistic programmed of SPSS using independent sample t-test with degree of confident 95% ($\alpha=0,05$). The result show that there was a significant difference between each formula

Keyword (s) : diclofenac sodium, microemulsion, drug release, carbomer 940, span 80, tween 80, ethanol 96%