ABSTRACT

CHARACTERIZATION DOSAGE FORM AND DRUG RELEASE TEST OF DICLOFENAC SODIUM WITH MICROEMULSION W/O SYSTEM IN HPC-M GEL BASE

(Mikroemulsion W/O with Surfaktan Span80 - Tween 80 : Kosurfaktan Isopropanol = 4:1)

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In this research focused to observe the characteristics of dosage form and release of diclofenac sodium with microemulsion w/o system in HPC-M gel base. Diclofenac sodium gel with emulsion was used as comparator. Microemulsion was maked with surfactant (Span 80-Tween 80): cosurfactant (isopropanol) = 4:1. The evaluation included organoleptic, pH, spread diameter measurement of zero load, and also diclofenac sodium release test from gel base of each formula. Data from pH test, spread diameter measurement of zero load, and flux from drug release test were evaluated based on independent sample t-test.

The result showed that microemulsion system in gel base (formula I) had thicker consistency than emulsion in gel base (formula II). Microemulsion in gel base showed significant difference on pH, spread diameter measurement of zero load and flux of diclofenac sodium showed significant difference if compared to emulsion in gel base. Data analysis showed that pH for formula I was 6.46 ± 0.03 and formula II was 6.33 ± 0.02. Spread diameter measurement of zero load for formula I was 7.47 ± 0.25 cm and for formula II was 12.72 ± 0,28 cm. It was analyzed by statistic program of SPSS using independent sample t-test with degree of confident 95% (α=0.05). The result showed that there was a significant difference between two formulas. Drug release test was carried out with Erweka Dissolution Tester Type DT 820 with apparatus 5 paddle overdisk in phosphate buffer 7,4 ± 0.05, temperature 32°C, 100 rpm. The rate of diclofenac sodium release in formula I was 48.37 ± 1.01 $\mu g/cm^2/menit^{½}$ and formula II could't be compared because it's broken.

Keyword(s) : diclofenac sodium, microemulsion, drug release, HPC-M, Span 80, Tween 80, isopropanol**.**