ABSTRACT

CHARACTERIZATION OF DOSAGE FORM AND PENETRATION DICLOFENAC SODIUM WITH MICROEMULSION SYSTEM IN HPMC 4000 GEL BASE

(Microemulsion W/O with ratio use of surfactant Span 80 – Tween 80 : Cosurfactant Ethanol 96% = 6:1)

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The aim of this study was to observe characterization dosage form and penetration diclofenac sodium with microemulsion system which contained ratio surfactant Span 80-Tween 80 and cosurfactant ethanol 96% = 6:1 in HPMC 4000 gel base through Wistar rat skin membrane. Diclofenac sodium gel with emulsion system was used as a control. The evaluation included characteristics of dosage form (organoleptis, pH, spreading diameter of zero load) and penetration (flux and permeable of membrane). Data were analyzed using independent sample t-test with degree of confident 95% (α=0,05).

Characteristic microemulsion system in gel base HPMC 4000 showed thicker consistency than emulsion system in gel base HPMC 4000. Different system gave no effect on pH but gave effect on spread diameter of zero load. Data analysis showed that spread diameter of zero load for microemulsion system in gel base HPMC 4000 was 7,7 cm and emulsion system in gel base HPMC 4000 was 12,73 ± 0,2 cm. Emulsion system in gel base HPMC 4000 was not evaluated with penetration test because system unstable. Flux in microemulsion system in gel base HPMC 4000 was 0,2181 ± 0,0354 µg/cm²/minutes and permeability of membrane was 2,0097 x 10⁻⁵ ± 3,2689 x 10⁻⁶ cm/minutes.

Keyword (s) : Diclofenac sodium, microemulsion system, HPMC 4000 gel base, penetration test.