

ABSTRACT

RELEASE OF DICLOFENAC SODIUM IN NIOSOME SYSTEM SPAN 60 - CHOLESTEROL FROM HPMC 4000 GEL BASE

(Niosome System of Diclofenac Sodium:Span 60:Kolesterol = 1:6:6)

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The present study was designed to investigate the release of diclofenac sodium in niosome system which consist of diclofenac sodium - Span 60 - cholesterol with molar ratio 1:6:6 from HPMC 4000 gel base. There were two formula. Formula I was diclofenac sodium gel made without niosome system and formula II was diclofenac sodium gel with niosome. The characteristic of formulas are shown by organoleptic, pH and spread diameter of zero load. The result showed that niosome system had effect on consistency and color. It also had effect on pH and spread diameter of zero load. But it didn't have effect on odor. Data analyze showed that pH formula I was $6,07 \pm 0,02$ and formula II was $6,36 \pm 0,02$. Spread diameter of zero load for formula I was $5,3 \pm 0,1$ cm and formula II was $5,0 \pm 0,1$ cm. Drug release test was carried out in phosfat buffer saline pH $7,4 \pm 0,05$, temperature 32°C , 100 rpm. The drug release (flux) for diclofenac sodium in formula I and formula II were $153,4483 \pm 1,0400 \mu\text{g}/\text{cm}^2/\text{menit}^{1/2}$ and $53,2868 \pm 2,0440 \mu\text{g}/\text{cm}^2/\text{menit}^{1/2}$. The result was analyzed by statistic programmed of SPSS 16.0 using independent-sample t test with degree of confident 95% ($\alpha = 0,05$). Research result revealed that release rate of diclofenac sodium from HPMC 4000 gel base with niosome system are slower than without niosome system.

Keywords : niosome, diclofenac sodium, Span 60, drug release, HPMC 4000.