



## *In Vitro* Transcutaneous Permeation of Acyclovir Sodium from HPMC Gels: Role of Chemical Permeation Enhancers

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**SUMMARY.** The main objective of the present study is to improve the permeation of acyclovir sodium (ACV) across stratum corneum (SC) from HPMC gel formulations. We have also investigated the role of chemical permeation enhancers like dimethyl sulfoxide, ethanol, limonene and sodium taurodeoxycholate on the transcutaneous permeation of ACV from HPMC gels. The optimized formulations were characterized and subjected to *in vitro* permeation study using excised rat abdominal skin. The histological examination of the skin was studied to understand the mechanisms involved in the permeation of ACV across skin. The cumulative amount of ACV permeated and the increase in permeation parameters ( $J_{ss}$ ,  $K_p$  and ER) were significantly higher for gel formulations compared to marketed formulation. A 2 to 4 fold increase in enhancement ratio clearly indicates the potential of formulating ACV into a gel.

**KEY WORDS:** Acyclovir sodium, Flux, gels, Hydroxypropylmethylcellulose, Permeation enhancers.

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