ABSTRACT

THE INFLUENCE OF PROPYLENE GLYCOL ON CHARACTERISTICS DOSAGE FORM AND DICLOFENAC SODIUM PENETRATION IN CARBOPOL 940 GEL BASE
(Penetration Used Wistar Rat Skin)

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The present study was designed to observe the influence of propylene glycol addition as enhancer towards characteristics of dosage form (organoleptics, pH, and viscosity) and diclofenac sodium penetration in Carbopol 940 gel base. Propylene glycol (PG) was added in formula II (PG 5%), formula III (PG 7.5%) and formula IV (PG 10%). As a control (formula I) was the diclofenac sodium in gel base without PG. The characteristic evaluations included organoleptics, pH, and viscosity. Results of organoleptics were odorless, the consistency was more liquid and it had clearer colour when it was added propylene glycol. The addition of propylene glycol 5-10% decreased gel viscosity significantly, but elevated levels of PGs from 5 to 7.5% didn’t decrease the gel viscosity. While the addition of propylene glycol 5-10% had no effect on pH of diclofenac sodium gel. The parameters of diclofenac sodium penetration study are flux and membrane permeability. These were analyzed by statistic programmed of SPSS 16 using one way analysis of variance. The addition of propylene glycol 5-10% showed no effect on penetration rate and membrane permeability of diclofenac sodium in Carbopol-940 gel base.

Keyword (s) : diclofenac sodium, propylene glycoll, flux, Carbopol gel base, rat skin.