

ABSTRACT

INFLUENCE OF PROPYLENE GLYCOL ON THE CHARACTERISTIC OF CREAM AND PENETRATION OF DICLOFENAC SODIUM IN VANISHING CREAM BASES (Penetration Used Wistar Rat Skin)

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The present study was designed to observe the influence of propylene glycol (PG) addition as enhancer to dosage form characteristics (organoleptic, pH, and viscosity) and diclofenac sodium penetration in vanishing cream base. In this experiment, was not propylene glycol added in Formula I (PG 0%). Propylene glycol was added in Formula II (PG 5%), Formula III (PG 7,5%) and Formula IV (PG 10%). The influence of propylene glycol (PG) 5, 7,5, and 10 % on the *in vitro* penetration of diclofenac sodium (DFS) through Wistar rat skin membrane from *vanishing cream* was investigated using Franz-type diffusion cells.

The characteristic evaluations showed that the addition of propylene glycol 5, 7,5, 10 % results a white, odorless, and smooth *semisolid* cream. It was found that the addition of propylene glycol 5, 7,5, 10 % has no effect on pH. The addition of propylene glycol 5 % has no effect on cream viscosity, while the higher concentrations of propylene glycol (7,5 and 10 %) significantly decreased the cream viscosity.

The cream containing 5 % PG showed no effects on penetration rate (flux) and membrane permeability, while the higher concentrations 7,5% significantly increased both of it. However, increasing PG concentrations to 10% will decreased flux and membrane permeability.

Keywords : Diclofenac sodium; Propylene glycol; vanishing cream bases; Wistar Rat Skin