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# Effects of varius penetration enhancers on percutaneous absorption of piroxicam from emulgels

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**Background and Aims:** This study was designed to prepare a suitable emulgel formulation of piroxicam (CAS36322-90-4) using different penetration enhancers.
**Methods:** A suitable emulgel formulation of piroxicam was prepared and its percutaneous permeation was investigated using Wistar rat skin and diffusion cell technique. The effect of three types of penetration emhancers (Myrj®52, Cineol and Transcutol®P) with different concentrations on transdermal permeation of the drug was also evaluated. Flux, Kp and enhancement ratios (ERs) of piroxicam in the presence of enhancers was measured and compared with emulgel base alone and simple commercial gel.
**Results:** The results showed a significant enhancement in the flux from emulgel base compared to hydroalcoholic gel formulation (9.91-fold over simple gel). The highest enhancement ratio (ER=3.11) was observed for Myrij52 at the concentration of 0.25%. Higher concentrations of Myrij52 did not show any enhancement in the drug flux due to micelle formation and solubilization of the drug by micells. The increase in solubility, in turn, increase the saturated concentration and reduces the thermodynamic activity of the drug.
**Conclusions:** Transcutol P with concentrations of higher than 0.25%w/w showed burst transportation of the drug through the skin. All concentration of cineol and Transcutol P did not show any enhancing effects over emulgel base alone (ER<1).

**Keywords:** Emulgel; Piroxicam; Penetration enhancer; Myrij52