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Venlafaxine Hydrochloride Transdermal Patches: Effect of Hydrophilic and Hydrophobic Matrix on *In Vitro* Characteristics

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SUMMARY. **Transdermal drug delivery systems of venlafaxine hydrochloride were prepared by using combination of hydrophilic (HPMC E15) and hydrophobic (ERS100 and ERL 100) polymers in 1:5, 2:4, 3:3, 4:2, 5:1 ratios by solvent casting technique with 15 % v/w propylene glycol as plasticizer. The drug permeation studies revealed that drug permeation increased proportionally with increasing HPMC ratio where ERS 100 as hydrophobic polymer but in case of ERL 100 as hydrophobic polymer proportional increase was not obtained this may be due to increased diffusion path length. The drug permeation kinetics followed zero order profile with diffusion mechanism. The average steady state flux obtained with HPMC: ERL 100 (3:3) was 193.2 μg/cm^2/h and the same was increased to 257 μg/cm^2/h with the incorporation of 5 % v/w of dimethyl sulfoxide as permeation enhancer that was 3 fold of target flux (86 μg/cm^2/h). The FTIR studies showed drug-polymer compatibility.**

KEY WORDS: Venlafaxine hydrochloride, Transdermal drug delivery, Eudragits, HPMC, Permeability.

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