ABSTRACT

Transdermal applications, relative to other routes, are non-invasive, requiring the sample adhesion of a "patch" resulting in better patient compliance, improved bioavailability of a drug and easy treatment termination. Therapeutically these dosage forms provide constant plasma drug levels constantly duplicating the benefits of I.V. infusion, avoid first pass metabolism, degradation in GIT and for the delayed action. Perindopril Erbumine, Trandolapril and Verapamil hydrochloride are the drugs which are used in the management of hypertension. The extensive first pass metabolism and short half life shown by these drugs, make them suitable candidates for Transdermal drug delivery. In this study transdermal patches are formulated for these antihypertensive drugs to improve their bioavailability and efficacy. Transdermal patches were prepared by solvent casting method using Sodium alginate, Sodium carboxymethylcellulose, Hydroxypropylmethylcellulose, Polyvinyl pyrrolidone K30, Chitosan, Carbopol 934P, Polycarbophil and Polyvinyl alcohol as polymers. The physicochemical interactions were examined by differential scanning calorimetry (DSC) and Fourier infrared spectroscopy (FTIR) and the results exposed no relations between polymers and the drug. The prepared patches were evaluated for physicochemical parameters, in vitro release and in vitro permeation. The patches showed an extended release of drug upto a period of 24 hours during in vitro permeation and followed non Fickian release. The stability of the optimized formulations was investigated as
per International conference on harmonization (ICH) guidelines and was found to be with respect to drug content in *vitro* permeation.

**Key words:** transdermal patch, *in vitro* permeation, perindopril, polycarbophil, trandolapril and non fickian release.