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Transdermal drug delivery of Fluvastatin Sodium: Effect of permeation enhancers and pressure sensitive adhesive

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The study was aimed to investigate transdermal permeation of Fluvastatin Sodium (FVS) from monolithic matrix system of polyacrylate based pressure sensitive adhesive. Effect of concentration of Durotak 87-9301 (DT 9301) on adhesion characteristics and selection of suitable penetration enhancer were also points of interests in present work. Different concentrations of DT 9301 & Eudragit RL 100 (E RL 100) were used as different PSA compositions. The transdermal patches were prepared by solvent casting method. Oleic acid, oleyl alcohol, transcutol P and isopropyl myristate were evaluated as permeation enhancer. The prepared formulations were evaluated for *in vitro* drug release study and physicochemical quality attributes. Combination of oleic acid and DT 9301 has shown maximum effect on drug release in comparison with other permeation enhancers studied. PSA composition with 46.5% w/w of DT 9301 & 26.5% w/w of E RL 100 was found to be optimum for targeted flux of FVS. Pharmacokinetic model fittings on optimized formulations indicated diffusion controlled drug release pattern based on Higuchi's model. Skin irritation study indicated no sign of irritation for selected formulation, revealed applicability of the patch for one day treatment. Optimized formulation provides its possibility to formulate in the area of 5.42 cm² based on the flux of F9 to attain and maintain input rate of FVS over a period of 24 h. It was possible to use E RL 100 with DT 9301 to make blend of polymers in order to achieve high release of fluvastatin sodium and sufficient self-adhesiveness of matrix patch.

Biography

Chintankumar J Tank is BPharm, MPharm (Pharmaceutics) and PhD. He is presently working as a Head, Faculty of Pharmacy and Associate Professor at Dr Subhash Technical Campus, Junagadh. He has 8 years of teaching experience. He has an experience of teaching various subjects of pharmacy. His area of interest is Transdermal Drug Delivery System, Niosomes & Nanoparticles. He has authored the book on the topics of "Pharmaceutical Microbiology and Biotechnology I". He has attended many seminars and conferences in national and international repute and also published papers in well reputed national & international journals. Recently, he has fetched the grant from GUJCOST to organize national level symposium.

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