BM-2

Retardation of Drug Transport through Pig Ear Skin by Liposome-Hydrogel

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Transport of drug entrapped in a liposome-hydrogel formulation was significantly retarded in an *in vitro* topical application. Liposomes containing hydrocortisone acetate, a hydrophobic antiinflammatory agent, were prepared by the precipitation method, and the liposomal suspension was mixed with hydrogel into a semisolid gel-type ointment. A hydrogel ointment containing free-form hydrocortisone acetate was prepared in addition. The liposomal and free-drug hydrogels were tested for permeation through the excised pig ear skin mounted on diffusion cells. From the experiments, it was found that more drug had permeated through the skin from the free-drug hydrogel than from the liposomal hydrogel. The two hydrogels were then tested for the drug release behavior by dialyzing hydrogels in an environment similar to the skin permeation test. Both hydrogels were found to have similar release efficiency. It is concluded that liposomes can be applied as an effective drug carrier for topical drug delivery and wound healing, rather than for transdermal delivery, because they reduce percutaneous absorption of drugs and systemic side-effects induced thereof.