

عنوان مقاله:

Effects of pressure sensitive adhesives and chemical permeation enhancers on rat skin permeation of nitroglycerin

محل انتشار:

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خلاصه مقاله:

Different drug in adhesive patches (DIAPs) of nitroglycerin were formulated using various pressure sensitive adhesives (PSAs) and various chemical permeation enhancers (CPEs). The effects of the PSAs and CPEs on skin permeation of nitroglycerin from DIAPs were evaluated using modified jacketed Franz diffusion cells fitted with excised rat abdominal skins. It was demonstrated that permeation rate or steady state flux (J_{ss}) of the drug through the excised rat skin was dependent on the viscosity and type of acrylic PSA as well as the type of CPE. Among different acrylic PSAs, Duro-Tak® 2516 and Duro-Tak® 2051 showed the highest J_{ss} 200.8 $\mu\text{g cm}^{-2} \text{h}^{-1}$ and lowest J_{ss} 112.4 $\mu\text{g cm}^{-2} \text{h}^{-1}$, respectively. Among the various CPEs used, propylene glycol and cetyl alcohol showed the highest and lowest enhancement on the skin permeation of nitroglycerin, respectively. Oleic acid and cetyl alcohol moderately increased the skin permeation of nitroglycerin. It was also shown that increasing the concentration of CPE led to reduction in adhesion property of PSA as measured by 180° peeling strength test.

کلمات کلیدی:

nitroglycerin, permeation enhancer, transdermal patches, pressure sensitive adhesive, rat skin

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