

ENHANCEMENT EFFECT OF DMSO AND ETHYL ACETATE ON PIROXICAM PERMEATION IN *ACUPEC HV-505* GELS*)

**Marline Abdassah, Anis Yohana Chaerunisaa, Mutakin
Faculty of Pharmacy, Padjadjaran University, Bandung**

ABSTRACT

Gel formulation of piroxicam 0.5 % was prepared using *Aqupect HV 505* 1 % as a base and DMSO or ethyl acetate as an enhancer. The concentrations of enhancer were 5, 7.5 and 10 % for ethyl acetate and 3, 5 and 7 for DMSO. The physical stability (organoleptic, pH, viscosity, consistency) and drug content during 56 days storage were investigated and the results showed that all gel formulas had good stability. The permeation rate of piroxicam was investigated using the rat abdominal skin as a membrane. Based on experimental results, both the ethyl acetate and DMSO gave significant enhancement on piroxicam permeation as compared with control. Piroxicam gel with DMSO 5% gave the best enhancement effect (8.9 %) and that with ethyl acetate 5 % gave enhancement of 8.0 % while the control gave 7.6 % .

Keywords: Piroxicam, Gel, Enhancer, DMSO, Ethyl acetat.

INTRODUCTION

Piroxicam is well absorbed following oral administration; however, its use has been limited by a number of side effects, including bleeding and ulceration. Transdermal administration of piroxicam can overcome this side effect, and higher local concentration can be maintained at the target site, which is desirable for anti-inflammatory agent. Transdermal drug delivery system has the additional advantages of avoiding hepatic first-pass metabolism and providing the controlled delivery of the drug for an extended period (Babar, 1990; Banakar, 1992).

The skin is widely recognized for its outstanding barrier properties compared with other biological membranes. The low permeability of the skin relative to other biological tissues is well known and keeps the skin as a minor port of entry for drug. To improve the permeability of drug through the skin, penetration enhancers have been incorporated into a formulation that would reversibly reduce the barrier resistance of the skin and thus allow

*) Presented in International Conference on Mathematics and Natural Sciences, Institut Teknologi Bandung, November 29-30th, 2006.