



Ethosomes: A Novel Approach in Transdermal Drug Delivery System

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Abstract

Transdermal drug delivery system was first introduced more than 20 years ago. Transdermal drug delivery system is a type of convenient drug delivery system where drug goes to the systemic circulation through the protective barrier i.e. skin is the main target of topical and transdermal preparations. Major aim of transdermal drug delivery system is to cross the stratum corneum. Vesicular system is one of the most controversial methods for transdermal drug delivery system. Ethosomes are non-invasive delivery carriers that enable drugs to reach the deep skin layers and/or the systemic circulation. Ethosomes are innovative novel vesicular system. Ethosomes are composed of phospholipid, alcohol, polyglycol and water. Ethanol increases the penetration rate of the skin and delivers the drug into the deeper layers of skin.

These systems are more efficient in delivering substances to the skin because of the presence of ethanol. Ethosomes are simple to prepare and safe to use. The purpose of this review is to focus on various aspects of ethosomes including their mechanism of penetration, preparation, composition, characterization, and application of ethosomes.

Keywords: Ethosomes, Transdermal, Ethanol, Phospholipid

Introduction

Transdermal drug delivery systems have recently been developed, aiming to achieve the objective of systemic medication through topical application to the intact skin surface^[1]. Transdermal therapeutic system is defined as self-contained discrete dosage forms which, when applied to the intact skin, deliver the drug, through the skin at controlled rate to the systemic circulation^[2]. Transdermal delivery can provide a number of advantage including enhanced efficacy increased safety, improved patient compliance. This route of drug administration avoids the hazards and discomfort associated with parenteral therapy and improves patient compliance^[3]. Transdermal route is an interesting option in this respect because transdermal route is convenient and safe^[4].

Transdermal drug delivery system is it encounters the barrier properties of the horny layer (Stratum Corneum) and hence only the lipophilic drugs that have molecular weight <500 Da can pass through it^[5]. TDD has some other therapeutic benefits such as sustained drug delivery to provide a steady state plasma profile and hence reduced systemic side effect, thus generating the potential for improved patient compliance, the bypass of first pass metabolism effect for drug with poor oral bioavailability^[6]. Now-a-days liposomes, niosomes, transferosomes and ethosomes (vesicular and non-invasive drug delivery) are used to increase the permeation of drug through the stratum corneum^[7].

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