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Review of Formulation of Transdermal Patches of Artocarpus Heterophyllus Lam

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Abstract: *The present investigation highlights the formulation and characterization transdermal patches of using artocarpusheterophyllus lam. Leaves and natural polymer. The Jackfruit leaves obtain from Artocarpus heterophyllus lam. belonging to family moraceae. The leaves extract obtained for a Soxhlet technique. The Jackfruit leaves pharmacological activity is anti Inflammatory, Anti diabetic, wound healing, Antibacterial , Anti fungal activity are shown The controlled drug delivery designed to release a drug predetermined rate in order to maintain a constant drug constant drug concentration for specific time of with minimum side effect. This leads to the concept of the controlled drug delivery. The primary objective of controlled drug delivery is to ensure safety and efficacy of the drug as well as patient complience. TDDS lies under the category of controlled drug delivery in which the aim is to deliver the drug through the skin is predetermined and controlled drug. The aim of Novel drug delivery system is to provide therapeutic amount of drug concentration. The drugdelivery system should deliver drug at a rate controlled by the necessarily of the body over a specified term of treatment. A transdermal patch is dedicated adhesive patch that is place on the skin to deliver a specific dose of medication through the skin into the blood stream. It detoxifies blood and cure acne, pimples, boils.*

Keywords: TDDS, NDDS, Jackfruit, Transdermal Patch

I. INTRODUCTION

Advanced techniques in biomaterials have resulted in the formulation of novel dosage form more pertinent to the transdermal, meeting the challenges of the physiochemical properties of the drug entity itself and achieving the therapeutic aim of the drug delivery system. The transdermal route has been used for many years to deliver drugs, which undergo first-pass metabolism. The transdermal route has the advantage of allowing excellent accessibility and reasonable patient compliance. Skin region offers attractive route of administration for local or systemic drug delivery. Recently interests have been focused on the delivery of drug to transdermal membrane by the use of bioadhesive material from natural sources. onsumption of plant derived medicines is wide spread and increasing significantly in both traditional and modern medicine. According to The World Health Organization, more than 80% of the world population in developing countries depends primarily on plant based medicines for basic healthcare needs (Canter et al., 2005). *Artocarpus* are economic sources of food and widely used in traditional medicine, agriculture and industry (Jarret, 1959). These genera received a great level of scientific interest as they contain medicinally important secondary metabolites possessing useful biological activities. A number of *Artocarpus* species are used as food and for traditional folk medicines in South-East Asia, Indonesia, Western part of Java and India. The present review assesses the potential of *Artocarpus* spp. in relation to its traditional uses and in terms of findings based on modern bioscientific research. The link between conventional remedies and recent research in various areas has been well established in other plants (Das et al., 2007, Gutierrez et al., 2008, Lansky et al., 2008) which facilitate to determine effective mode of action of plant derived products. The present plant is known to contain several pharmacological important biomolecules as listed earlier whose efficacy is well established by several biochemical and pharmacological studies. This review indents to compile various studies on this plant and critically evaluates the issues related to the ethnobotanical, ethnomedical and ethnopharmacology of *Artocarpus*. The Artocarpus heterophyllus lam (jackfruit) Leaves extract is natural extract obtained from the Artocarpus heterophyllus lam belonging to family Moraceae. The literature survey revealed that it has potential as a film former and also as the tablet binder. Thus it can be explored for the formulation of transdermal patch using leaves extraction as a model drug for extended delivery of drug. A transdermal patch or skin patch is a

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medicated adhesive patch that is placed on the skin to deliver a time released dose of medication through the skin and into the bloodstream. Transdermal drug delivery is the application of drug on the skin surface so that it can permeate through the skin and reaches the systemic circulation at sufficient concentration to ensure therapeutic efficacy.

II. METHODS AND MATERIALS

The Leaves were collected from the Artocarpus heterophyllus linn. tree in Maharashtra. It was ensured that the plant was healthy and uninfected. The leaves were washed under running tap water to eliminate dust and other foreign particles and to cleanse the leaves thoroughly and shed dried.

The shade dried leaves were subjected to size reduction. About 100g of the dried powder was extracted continuously in Soxhlet apparatus with petroleum ether for 24 hrs to remove the waxy materials.

Then it was extracted with distilled for 72h. After 72h, the water substancewas evaporated to obtain the crude extract. The extract was dried under vacuum oven.

Chemicals-

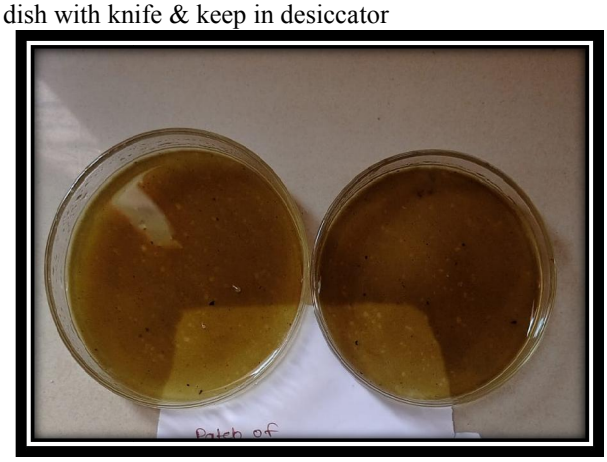
- Glycerine
- Gelatin/Sodium Alginate
- Dimethyl Sulfoxide (DMSO)
- Ethanol Extract
- Aqueous water

Equipment-

- Desiccator
- Digital vernier caliper
- Electronic Balance
- Digital PH meter
- Magnetic stirrer

Procedure for transdermal patches

Weigh quantity of Sodium Alginate dissolve in water & heated on water bath. Addition of extract by continuous stirring to form homogenous Addition of DMSO & glycerine then pour mixture into Petri dish. Air dry for 24 hrs at room. Patches peel off from petri dish with knife & keep in desiccator



Transdermal Patch of *Artocarpus Heterophyllus* By using Polymer Sodium Alginate

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II. CONCLUSION

Aqueous extract of Artocaprus heterophyllus linn. transdermal patches were prepared by solvent casting technique. The various formulation parameters, Drug-Polymer ratios and permeation enhancers were optimized to get thin, transparent, smooth, stable and high permeable transdermal patches. If the amount exceeds, the film loses its flexibility and become stiff. The plasticizer diffuses through the patch and softens the polymer particles. This softening promotes latex coalescence and patch formation. This indicates the homogenous dispensing of drug during the patch preparation. The stability studies results showed that there is no significant change from its initial nature till the period of three weeks at 40˚C. The present work has achieved the objectives of formulation of transdermal patch of Aqueous extract of Artocaprus heterophyllus linn by using different polymers. Transdermal drug delivery systems are topically administered medicaments in the form of patches that deliver drugs for systemic effects at a predetermined and controlled rate. Aqueous extract of Artocarpus heterophyllus linn transdermal patches were prepared by solvent casting technique

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