

Microneedle : A Novel Platform for Transdermal Drug Delivery System

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Abstract

Advancements in novel drug delivery technologies has lead way towards achieving delivery of drugs like protein, peptide & also the hydrophilic drugs, through the transdermal route of which using of *microneedles* for the purpose is quite significant. Contrary to the conventional diffusion mechanism of drug release through skin, this technique is based on the disruption of the skin & placing the drug on the epidermal layer. Moreover it does not pass the stratum corneum so it does not reach the nerve endings making it a painless therapy. Thus, microneedle insertions are painless, improve patient compliance and reduce the dosing frequency. Microneedle is a novel carrier for transdermal drug delivery system where microgram quantity of drug can be delivered. The use of micron scale needles increases the permeability of the skin. The drug, in bimolecular form, is encapsulated within the microneedles in hollow, coated, dissolving and solid form by using metals, polymers, silicon and glass. Thus it can be concluded that, these painless systems would qualify to be one of the important devices for controlled drug release in future and represent to be an efficient and superior carriers as compared to other needle based drug delivery systems.

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Novel Approaches over Colon Targeted Drug Delivery Systems: An Overview

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Abstract

Targeted drug delivery system is the system in which the dosage form is modified to deliver the drug at the target region or at the disease region. In recent years different types of novel drug delivery systems are developed colon specific drug delivery system (CDDS) is one of them. The colon is a site where both local and systemic delivery of drugs takes place. Colon targeted drug delivery system is not only used to treat diseases associated with colon like Crohn's disease, ulcerative colitis etc. but also for systemic delivery of proteins, therapeutic peptides, anti-hypertensive drugs etc. To achieve successful colon targeted drug delivery a drug which normally inactivated in the upper part of the GI tract or need to be protected from degradation, release and absorption then to be ensured abrupt or controlled release in the proximal colon. This targeting of drug to the disease site lowers the requirement of higher doses of drug, thus reducing dosage frequency and cost of drugs. The colon as a site of drug delivery offers various therapeutic advantages due to its near neutral pH and longer transit time. Colon targeting holds great potential and still needs some more innovative work. Primary approaches for (CDDS) Colon specific drug delivery system includes pH, time dependent systems and microbial triggered drug delivery system achieved limited success.