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A Brief Review on Nanostructured Lipid Carrier

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ABSTRACT

Pharmaceuticals are prepared using well-established techniques for all major types of drug delivery systems in nanoscience using lipid-containing drug delivery systems, such as NLC. This paper goes into great detail into the many needs and issues linked to NLC that are specific to lipid formulations. NLCs' remarkable physicochemical and then biocompatible qualities have created an ongoing need for the creation of effective and safe drug delivery methods. There have been notably more papers published in the past few years describing formulations based on NLCs. Their ingredients have a special impact on the end product's physicochemical characteristics and efficacy. NLCs can be produced using a variety of methods that are categorized based on the amount of energy used. Increased use of NLCs is necessary to get over obstacles posed by the technological process of forming lipid-based nanocarriers and to learn more about the fundamental principles underlying their transport via a variety of delivery methods. They can be applied in many ways and through various channels, including cutaneous, ophthalmic, oral, and pulmonary. Through an explanation of their uses, this review paper aims to provide an overview of the current state of the art for NLCs for use in future clinics. The data that has been recorded clearly shows the potential of NLCs for novel therapeutic uses in the future. Many studies have been conducted on nanostructured lipid carriers (NLCs) as drug delivery nanovesicles. NLCs have an advantage over other traditional lipidic nanoformulations as liposomes, solid lipid nanoparticles (SLNs), and nanoemulsions, because of their greater physical durability, biocompatibility, and increased drug loading capacity. Because of the advantages of nanomaterials and the lipidic structure of the vesicles, which mask undesirable taste, prevent degradation by enzymes, and are preferentially absorbed by the lymphatic system through small particles. NLCs are considered a promising strategy for oral bioavailability enhancement of drugs.

KEYWORDS: Nanostructured lipid carrier, lipid containing drug delivery system, biocompatible, solid lipid nanoparticles, bioavailability enhancer

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