REVIEW ARTICLE

RECENT ADVANCES IN NIOSOMES TECHNOLOGY

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(Received 26 January 2025) (Accepted 30 July 2025)

ABSTRACT

Niosomes, non-ionic surfactant-based vesicles, have garnered important consideration in the realm of targeted drug delivery because of their biocompatibility, stability and ability to encapsulate a wide variety of drugs. Recent advancements have focused on optimizing niosomal formulations for enriched therapeutic efficacy as well as targeted delivery. This review delivers a comprehensive overview of the latest progress in niosomes technology, highlighting novel fabrication methods, surface modifications, and their applications in treating various diseases. The physicochemical properties of niosomes, their drug loading capacities, and the mechanisms by which they enhance bioavailability and target specificity. Special emphasis is placed on the development of stimuli-responsive niosomes and their role in precision medicine. Clinical studies and potential challenges in translating niosome-based therapies from bench to bedside are also examined. This review underscores the potential of niosomes as a versatile and efficient platform for targeted drug delivery, paving the way for future innovations in personalized medicine.