Short Communication

Niosomes

A. G. Nerkar¹,²,³, *, G. S. Chakraborty¹

¹ Dept. of Medicinal Chemistry and Pharmacology, Parul Institute of Pharmacy & Research, Parul University, Vadodara, Gujarat, India
² Founder and Director, Ateos Foundation of Science Education and Research, Pune, Maharashtra, India
³ Founder and Director, Carolene Therapeutics, Pvt. Ltd., Aurangabad, Maharashtra, India

ARTICLE INFO

Article history:
Received 26-05-2021
Accepted 21-07-2021
Available online 31-07-2021

Keywords:
Niosome
Cholesterol
Hydrophilic and Lipophilic medicine
Surfactant
Adjuvant
Research
Biodegradable

ABSTRACT

Niosomes are non-ionic surfactant vesicles. These are obtained by hydrating combination of cholesterol and non-ionic surfactants. It is used as carrier for amphiphilic and lipophilic medicine. Niosomes are identity assemble vesicles collected largely of artificial surfactants and cholesterol. Drug delivery potential of niosomes can be enhanced in use of novel drug delivery concepts similar to proniosomes, discomes and aspasomes. By reducing the clearance the rate of niosomes they provide better help in analytic imaging and as a vaccine adjuvant. As well as they supply better support in analytic imaging and as a vaccine adjuvant. This short communication reviews the niosomes.

© This is an open access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Introduction

Niosomes are a novel drug delivery system, which trap the hydrophilic drug in the middle cavity and hydrophobic drugs into the non-polar area present within the bilayer hence equally hydrophilic and hydrophobic drugs can be integrated into niosomes.

For various decades, medication of an severe disease or a chronic sickness have been capable by delivering drugs to the patients passing through diverse pharmaceutical quantity forms like tablets, capsules, pills, creams, ointments, liquids, aerosol, injectables and suppositories as carrier. To achieve and then to maintain the absorption of medicine administered surrounded by the therapeutically useful collection essential for medication, it is often essential to obtain this type of drug delivery systems.²

The concept targeted drug delivery is intended for attempting to focus the drug in the tissues of while reducing the qualified concentration of the medication in the outstanding tissues. As a result, drug is confined to a small area on the targeted site.³

Niosomes are encapsulated in vehicles. The active agent surfactant is composed non-ionic bilayer. It is very important system in vascular structure of encapsulated drug, and reduce the toxicity. It is the different type of preparation of method. Niosomes are Structurally related to liposomes and also are equiactive in drug delivery future but high chemical strength make niosomes advanced than liposomes. Equally consist of bilayer, which is ended in non-ionic surfactant in the folder of niosomes and phospholipids in case of liposomes. Niosomes are atomic lamellar structure of size range between 10 to 1000 nm and consists of environmental, non-immunogenic and biocompatible surfactants.⁴

1.1. Salient features of niosomes

1. Niosomes can easily dissolve.
2. Niosomes are surrounding lively and stable.
3. Niosomes is comprising of hydrophobic and hydrophilic infrastructure.
4. The medication atoms with an extensive diversity of dissolvability.
5. The stability of niosomes increase the entrapped medicine. 

1.2. Advantages 
1. Oral bioavailability is improved for the poorly soluble drugs.
2. The condition are the medication limiting is target cell
3. The medicine increases absorption of the properly applied to the skin
4. The medicine is commonly used to non-aqueous type
5. The surfactant used and also the prepare niosomes are biocompatible and biodegradable.
6. A condition is required in handling and storage of surfactants.
7. Its administration in different type of routes ex:-topical, inhalation intravenous intradermal etc
8. They made to reach for the site of action in oral, parenteral as well as current route. 

1.3. Comparison of niosomes

1.4. Structure of niosome

The vascular system is similar to liposome that can be used as carriers of amphiphilic and lipophilic drug. The action of les is improve the toxic drug in restricting by the cell.
2. Material and Methods

Light scattering and transmission electron microscopy.

1. Vesicle characterization
2. Homogeneity and zeta potential
3. Drug delivery efficiency
4. In terms of mean size
5. Size exclusion chromatography

3. Conclusion

Niosomes is studied as an alternative to liposomes. Niosomal drug delivery system is one of the examples in the great progression in drug delivery technology. The idea of drug inclusion in the niosomes and targeting to the niosomes. The exact site is commonly accepted by researchers and academicians. Advantages in excess of the liposomes make it a recovered targeting agent, to the area of achievement for healthier efficiency.

4. Source of Funding

None.

5. Conflict of Interest

None.

References


Author biography

A. G. Nerkar, Professor, Editor in Chief, Current Trends in Pharmacy and Pharmaceutical Chemistry

G. S. Chakraborthy, Professor and Principal