Formulation and Characterization of Niosomes as Potential Nanoparticles for Drug Delivery

Elena Drakalska[1], Bistra Angelovska[1], Aleksandar Cvetkovski[1], Tamara Stefanovska[1]

[1]*"Faculty of Medical Sciences, University Goce Delchev"-Shtip, R. Macedonia*
**Corresponding Author: e-mail: bistra_angelovska@yahoo.com*

Abstract

The therapeutic potential of many active substances is limited in clinical practice due to its disadvantageous physicochemical properties, pharmacokinetics and variable side effects causing low bioavailability and poor therapeutic concentration in the target tissue. An intriguing strategy to overcome these limitations is the design of nanosized drug delivery systems. As a relatively new generation, vesicular systems especially niosomes are the most researched and characterized structures. Present study reports a detail review of data from clinical studies of different formulations of niosomes, methods of preparation and characterization of their structure, the influence of various parameters on the noisome stability and the market's patented formulations by now. We gathered the data needed for this study by searching relevant scientific and professional literature, made a comparison between niosomes and other vesicular nanosystems, listed the advantages and disadvantages and discussed the results of clinical studies on various active substances incorporated into niosomes. From the collected and processed data we concluded that niosomes are potential carriers for many active substances providing higher solubility, greater stability and enhanced bioavailability.

Keywords: Niosomes, vesicular systems, surfactant, drug delivery.