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Review Article

# Viability of Nanostructured Lipid Carrier System in Overcoming the Barriers Associated with Chemotherapeutic Delivery

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## Abstract

Delivery of anti-cancer agents is challenging due to some inherent problems associated with them like instability, low solubility, non-specificity, variable pharmacokinetics, narrow therapeutic window, multi-drug resistance development, and other physiological barrier related to tumor cells. In recent years, Nanostructured lipid carrier (NLC) has gained considerable importance in improving anti-cancer agents' therapeutic efficacy.

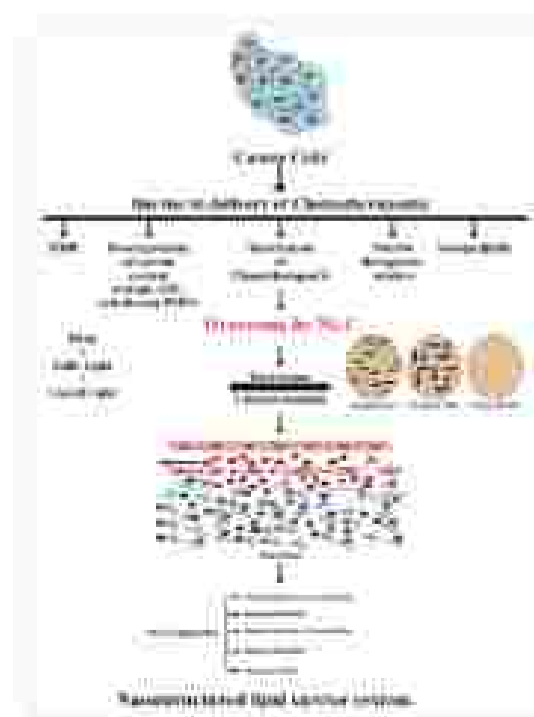
The present review furnishes a comprehensive account of various barriers encountered in delivering the anti-cancer agent, the suitability of NLC to deliver anti-cancer agent, the techniques employed for the fabrication of NLC, its structure, along with its characterization. The main emphasis has given a break worth to overcome barriers in delivering chemotherapeutic through NLC so far, a number of qualitative literature have been included in this review. Further, the study describes the stability issue associated with the long-term storage of NLC.

The NLCs systems offer a great potential to target various anti-cancer agents suffering from low solubility, non-specificity, and severe adverse effects. The NLC system's development can overcome barriers encountered in delivering anticancer agents and improve its efficacy in various melanoma types.

**Keywords:** [Anti-cancer agent](#), [Nanostructured lipid carrier](#), [cancer](#), [lipid carrier](#), [NLC](#), [Multi-drug resistance](#).



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