







Special Issue Reprint

Current Insights on Lipid-Based Nanosystems 2023

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Lipid-based nanosystems, including solid lipid nanoparticles (SLN) and nanostructured lipid carriers (NLC), cationic lipid nanoparticles, nanoemulsions, and liposomes, have been extensively studied to improve drug delivery through different administration routes. The main advantages linked to these systems are the ability to protect, transport, and control the release of lipophilic and hydrophilic molecules (either small molecular weight or macromolecules); the use of generally recognized as safe (GRAS) excipients that minimize the toxicity of the formulations; and the possibility to modulate pharmacokinetics and enable the site-specific delivery of encapsulated payloads. In addition, the versatility of lipid-based nanosystems has been further demonstrated through the delivery of vaccines, protection of cosmetic actives, or improvement in the moisturizing properties of cosmetic formulations.

Currently, lipid-based nanosystems are well established, and there are already different commercially approved formulations for different human disorders. This success has actually paved the way to diversifying the pipeline of development, upon addressing unmet medical needs for several indications, such as cancer; neurological disorders; and autoimmune, genetic, and infectious diseases.

This Special Issue aims to update readers on the latest research on lipid-based nanosystems, both at the preclinical and clinical levels.



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