

Lipid-based nanoformulations as delivery systems for new and improved drug molecules

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Abstract Text

In medicine today, many diseases are faced with promising basic research results with respect to new and improved drug molecules. Development of treatment is however hampered by effective delivery of the drugs. The focus of the present work is on lipid-based formulations, such as liposomes, lipidic nanocapsules, solid lipid nanoparticles and lipid complexes, as delivery systems for conventional and new drug molecules as well as for antimicrobial peptides. Lipid formulations can be used for several delivery routes; nevertheless, the work herein focuses on topical applications, and on delivery to the eyes and lungs. To be able to use lipid formulations as drug delivery systems the formulations need to be applicable in a clinical setting. Optimization for drug loading efficiency, drug release, physical and chemical stability, manufacturing process (including scalability for clinical studies), environmental impact and cost are aspects that need to be considered during formulation development. Key results from two large collaborative projects where RISE is a major partner will be presented, namely FORMAMP and transMed. The objective is that these formulation studies will pave the way for further development for every day therapeutic use in patients.

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