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Autore	Silva Ana Catarina
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Sommario/riassunto	The use of lipid-based nanosystems, including lipid nanoparticles (solid lipid nanoparticles (SLN) and nanostructured lipid carriers (NLC)), nanoemulsions, and liposomes, among others, is widespread. Several researchers have described the advantages of different applications of these nanosystems. For instance, they can increase the targeting and bioavailability of drugs, improving therapeutic effects. Their use in the cosmetic field is also promising, owing to their moisturizing properties and ability to protect labile cosmetic actives. Thus, it is surprising that only a few lipid-based nanosystems have reached the market. This can be explained by the strict regulatory requirements of medicines and the occurrence of unexpected in vivo failure, which highlights the need to conduct more preclinical studies.Current research is focused on testing the in vitro, ex vivo, and in vivo efficacy of lipid-based nanosystems to predict their clinical performance. However, there is a lack of method validation, which compromises the comparison between different studies.This book brings together the latest research and reviews that report on in vitro, ex vivo, and in vivo preclinical studies using lipid-based nanosystems. Readers can find up-to-date information on the most common experiments performed to predict the clinical behavior of lipid-based nanosystems. A series of 15 research articles and a review are presented, with authors from 15 different countries, which demonstrates the universality of the investigations that have been carried out in this area.