Abstract

Parasitic diseases such as malaria, leishmaniasis, and trypanosomiasis represent a significant global burden and pose a great challenge to drug discovery and delivery scientists due to their intracellular nature and disseminated locations. Moreover, poor rate of discovery in the anti-parasitic segment seen in last few decades has necessitated effective management of existing drugs by modulating their delivery. The review focuses on the biological and biopharmaceutical issues to be considered in the design of delivery strategy for treating parasitic infections such as malaria, leishmaniasis, and trypanosomiasis. Also, it describes the role of the colloidal carriers liposomes, polymeric nanoparticles, lipid nanoparticles including lipid drug conjugate (LDC) nanoparticles in optimizing the delivery of anti-malarial, anti-leishmanial and anti-trypanosomial agents. Furthermore, the review emphasizes especially the potential of solid lipid nanoparticles (SLN) in the treatment of parasitic infections with the help of recent reports and our own experience.