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Abstract

Complex biological barriers are major obstacles for preventing and treating disease. Nano-carriers are designed to overcome such obstacles by enhancing drug delivery through physiochemical barriers and improving therapeutic indices. This review critically examines both biological barriers and nano-carrier payloads for a variety of drug delivery applications. A spectrum of nano-carriers is discussed that have been successfully developed for improving tissue penetration for preventing or treating a range of infectious, inflammatory, and degenerative diseases.

Keywords: nanoparticle, drug delivery, biological barriers, blood brain barrier, tumor microenvironment, vector-borne disease

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