

An overview on recent biomedical applications of biopolymers: Their role in drug delivery systems and comparison of major systems

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ABSTRACT

Polymers are ubiquitous in our daily lives, from workplaces to homes. Biopolymers are becoming more popular as an alternative to petroleum-based polymers because of their lower environmental impact due to their low carbon footprint and easy degradation. The primary aim of developing technology is a better quality of life. Improved therapies and tailor-made treatments are currently the focus of scientists. However, the delivery of drugs has been a long problem in the field of medicine. As a result, many drug delivery systems (DDSs) have been created for this purpose. Among these, nanotechnology-based DDSs, especially nanofibers, hold a promising future. This review focuses on the importance of naturally abundant biopolymers in recent medical applications, especially their role in DDSs, and provides a crucial comparison of the merits and demerits of the major DDSs for researchers to develop tailor-made DDSs.

KEYWORDS

Biomedical; Biopolymers; Drug delivery systems; Nanofibers; Nanotechnology

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