



Graft Copolymers of Polysaccharides for Drug Delivery Systems

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Editors

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CHAPTER 3

Polymer Derivatives for Drug Delivery Application

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ABSTRACT

The field of drug delivery has undergone significant advancements over the past few decades, and the progress of innovative drug delivery systems (IDDSs) has turned out to be a crucial aspect of the pharmaceutical industry. One such system that has gained significant consideration in recent years is the use of graft copolymers of polysaccharides as drug delivery vehicles. Polysaccharides, being biocompatible and biodegradable, have emerged as attractive polymers for the design of DDSs. The combination of polysaccharides with synthetic polymers to form graft copolymers enhances the properties of both polymers and results in the progress of novel DDSs. Current developments in the design and synthesis of graft copolymers of polysaccharides have shown promising results in many applications, including the controlled release of drugs, improved stability and bioavailability of drugs, and targeted drug delivery. Despite the promising results, the use of graft copolymers of polysaccharides as DDSs still faces certain challenges. One of the major challenges is the lack of stability of the copolymers in biological environments, leading to rapid degradation and reduced drug release efficacy. Additionally, the synthesis of graft copolymers can be complex and time-consuming, and there is a need for more efficient and cost-effective synthetic methods. Furthermore,

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