



Functional Polymers for Nanomedicine

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Synopsis

Interest in the application of nanotechnology to medicine has surged in recent years and could transform the way we diagnose, treat and prevent diseases such as cancer. However, the clinical success of nanomedicine is limited because of problems with toxicity and therapeutic efficacy. To overcome this it is essential to produce new nanosystems with specific functions, which can be achieved by designing new polymers with particular properties that can be used for nanomedicine. Functional Polymers for Nanomedicine provides a summary of the current problems and directions of the field and an overview of different polymers with particular functions including hyperbranched polymers, polymersomes, polysaccharides, polymeric micelles and zwitterionic polymers and their applications in gene therapy and drug delivery. This timely book is edited by a leading scientist in nanomedicine and provides a suitable introduction and reference source for advanced undergraduates, postgraduates and academic and industrial researchers in polymer science, nanotechnology and pharmacy interested in materials for medical applications.

Brief Contents

- Targeted Drug Delivery in Oncology: Current Paradigm and Challenges
- Targeted Nanomedicine: Challenge and Opportunities
- Rational Design of Translational Nanocarriers
- Functional Polymers for Gene Delivery
- Functional Hyperbranched Polymers for Drug and Gene Delivery
- Functional Polymersomes for Controlled Drug Delivery
- Polymeric Micelle-Based Nanomedicine for siRNA Delivery
- Polysaccharide/polynucleotide complexes for cell-specific DNA delivery
- Design of complex micelles for drug delivery
- Zwitterionic Polymers for Targeted Drug Delivery

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