Dendrimer-Based Drug Delivery Systems: From Theory to Practice

The opportunities and challenges of using dendrimers to improve drug delivery.

Among pharmaceutical and biomedical researchers, the use of dendrimers in drug delivery systems has attracted increasing interest. In particular, researchers have noted that the volume of a dendrimer increases when it has a positive charge. If this property can be applied effectively, dendrimers have enormous potential in drug delivery systems, directly supplying medication to targeted human organs.

With contributions from an international team of pioneers and experts in dendrimer research, this book provides a comprehensive overview of the latest research efforts in designing and optimizing dendrimer-based drug delivery systems. The book analyzes key issues, demonstrating the critical connections that link fundamental concepts, design, synthesis, analytical methodology, and biological assessment to the practical use of dendrimers in drug delivery applications. Topics covered include:

- Dendrimer history
- Synthesis
- Physicochemical properties
- Principles of drug delivery
- Applications in diverse biomedical fields

Dendrimer-Based Drug Delivery Systems reflects the authors' thorough review and analysis of the current literature as well as their own firsthand experience in the lab. Readers will not only discover the current state of the science, but also gain valuable insights into fruitful directions for future research. References at the end of each chapter serve as a gateway to the growing body of literature in the field, enabling readers to explore each individual topic in greater depth.

Pharmaceutical and biomedical researchers will find this book a unique and essential guide to the opportunities, issues, and challenges involved in fully exploiting the potential of dendrimers to improve drug delivery.