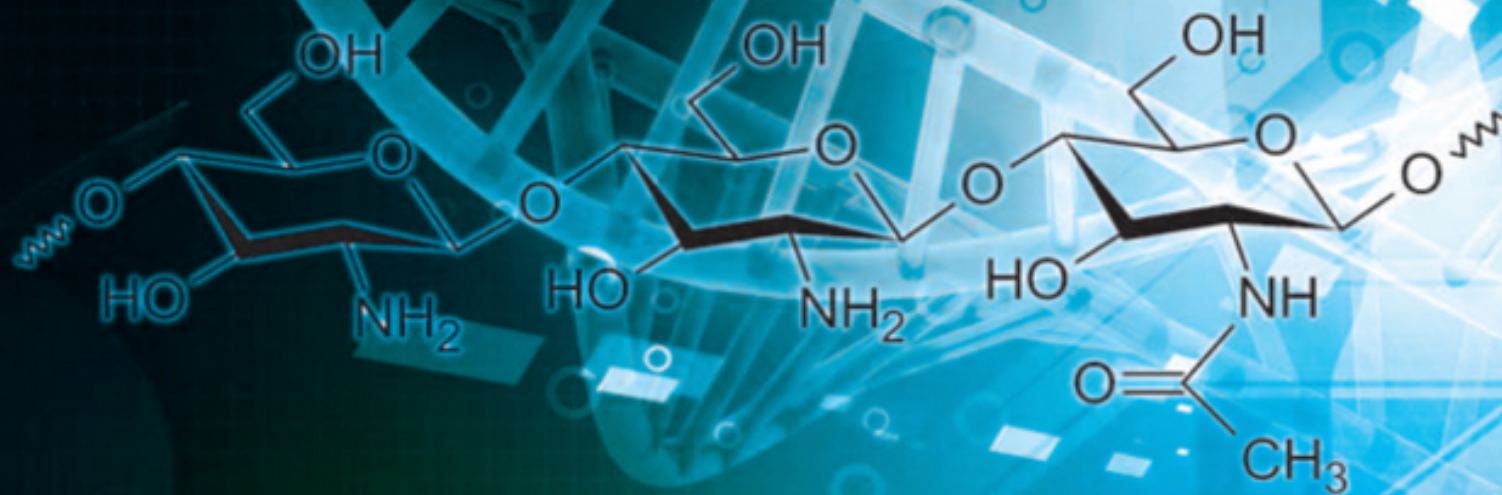


EDITORS | BRUNO SARMENTO | JOSÉ DAS NEVES

CHITOSAN-BASED SYSTEMS FOR BIOPHARMACEUTICALS

DELIVERY, TARGETING AND POLYMER THERAPEUTICS



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Chitosan-Based Systems for Biopharmaceuticals

Delivery, Targeting and Polymer Therapeutics

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Foreword

The reading of the book *Chitosan-Based Systems for Biopharmaceuticals: Delivery, Targeting and Polymer Therapeutics* has given me great pleasure because it represents a nice illustration of the area of research to which I have dedicated an important part of my research career. It was in the early 1990s, working at MIT with Bob Langer on the encapsulation of proteins within poly(lactide-co-glycolide) (PLGA) microspheres, that I became conscious of the necessity of new biomaterials for the controlled delivery of delicate compounds, that is, biopharmaceuticals; biomaterials which would be friendly with the associated compounds; biomaterials which could be converted into nanoparticles using mild techniques; and biomaterials that could have a low price based on their wide availability in nature. Chitosan comes to my mind as a wonderful biomaterial fulfilling all these desirable properties. Our goal was to convert chitosan powders into nanoparticles using a procedure that would be adequate for the association of biopharmaceuticals. We were then the first authors reporting the ionotropic gelation technique for the association of proteins to chitosan nanoparticles in 1997. Now, it is amazing for me to see how the history of this biomaterial has evolved. We find thousands of articles and hundreds of patents using the keywords “chitosan nanoparticles.” It is, indeed, the biomaterial that has attracted the most significant research attention in the area of nanodrug delivery. As a consequence of this accumulated information, we got to know this unique material quite well. For example, we currently recognize how we can engineer this material in order to make it useful for a variety of interesting biomedical applications and, even more importantly, we can appreciate how this biomaterial is