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Bioavailability and biodistribution studies for design of novel delivery systems

Poor bioavailability and non-selective distribution are challenges for delivery of most of the drugs. Researchers are continuously working on development of novel delivery systems for overcoming drawbacks of conventional formulations, including avoiding unwanted effects. Designing novel delivery system is great commercial opportunity as getting new drugs are very costly and require stricter regulatory compliance. However, evaluation of novel delivery systems is challenge. Pharmacokinetic and biodistribution studies of novel delivery systems can help to evaluate and predict pharmacodynamic benefits of designed novel delivery systems. In this presentation, design of novel delivery system for anticancer and CNS drugs and their pharmacokinetic and biodistribution study results, in animal model, will be presented to prove their pharmacodynamic benefits. The group worked on anticancer and CNS active drugs and found selective distribution and better pharmacokinetic properties of the selected drugs. Distribution to target organs enhanced and AUC, elimination half-life increased for novel delivery systems. Target index found to be enhanced. Based on pharmacokinetic and selective distribution it can be concluded that dose can be reduced with better efficacy and patient compliance. Survival time and life expectancy of anticancer drug in animal model found to be enhanced in designed nanoparticulate novel delivery systems.

Biography

R N Saha is Shri B K Birla & Shrimati Sarala Birla, Chair Professor (Senior Professor of Pharmacy) and Director of BITS Pilani Dubai Campus. In 2011 he has been awarded Shri B K Birla and Shrimati Sarala Birla Chair Professorship at BITS Pilani for contributions in teaching and research. He has vast experience in the field of Pharmacy especially in Pharmaceutics, novel drug delivery systems and Pharmacokinetics. He received "Pharmacy Professional of the Year 2013" Award given by Indian Association of Pharmaceutical Scientists and Technologists. He is also recipient of "The Best Pharmacy Teacher Award" for the year 2005, awarded by the Association of Pharmaceuticals Teachers of India (APTI), in recognition of his contribution in teaching and research in the field of Pharmacy. He is also member of many scientific associations and societies like Association of Pharmaceutical Teachers of India (APTI); Indian Pharmaceutical Association (IPA); Indian Society of Technical Education (ISTE); Controlled Release Society Inc., USA; American Association of Pharmaceutical Scientists (AAPS), USA; American Chemical Society, USA; Controlled Release Society, Indian Chapter

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