Nanodrug carriers: Evolving strategy to solve bioavailability problems of poorly soluble drugs for successful oral delivery

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Abstract

Poor solubility of majority of pharmaceutical agents has been an everlasting burden for successful oral drug delivery. Low aqueous solubility directly hampers the oral bioavailability and thus the onset of action is unduly delayed. Several compounds have been failed to reach at production stage owing to their low absorption associated with low bioavailability upon oral administration. Poor oral bioavailability restricts the drugs to reach their desired effective concentration in blood to elicit therapeutic action. Thus, strategies to improve solubility and bioavailability of orally administered drugs have been constantly attempted by the formulation scientists. Over last few years, novel drug delivery platforms like polymeric nanoparticles, nanoliposomes, polymeric micelles, solid lipid nanoparticles etc. have been catching the attention of scientists in designing modified drug carriers to enhance the long pending bioavailability issues poor soluble drugs. Such nanodrug delivery platforms owing to their architectural uniqueness protect the loaded cargo against enzymatic degradation plus increase the gastro intestinal absorption to enhance their bioavailability. In recent times, advanced/engineered nanodrug carriers have shown promising potential in solving bioavailability issues of hydrophobic drugs, which needs further discussion and exploration for their future clinical translations.

Biography:

Dr. Bhabani Sankar Satapathy has been a teaching experience of more than 6 years in graduate and post graduate pharmacy courses in several institutions in Odisha and West Bengal also. He was a DST/Inspire research fellow, Govt. of India and completed his PhD from Department of Pharmaceutical Technology, Jadavpur University, India under the supervision of Prof. Biswajit Mukherjee. He was a previous alumnus of Siksha 'O' Anusandhan, Bhubaneswar, where, he is now presently working as an Asst. Professor, in the Dept. of Pharmaceutics. He has many research publications in several national and international journals of repute such as in RSC advances, Journal of microencapsulation etc. to name a few. He co-authored 5 book chapters and co-chaired in several scientific seminars across the state. Area of Dr. Satapathy basically includes nanoparticle based drug delivery platforms in cancer therapy.

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