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Nanotechnology: A challenge in traditional medicine

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Herbal medicines have been widely used all over the world since ancient times and have been recognized by physicians and patients for their better therapeutic value. The western world has begun to acknowledge the importance of traditional medicines as they symbolize safety in contrast to the allopathic medicines, which tend to produce undesirable side effects and are lacking in curative value. With the advanced nanotechnology, the nanophytomedicines could improve the biological availability and the therapeutic effects, with target-oriented administration, which would adequately improve the therapeutic effects, avoid the adverse effects caused by the long-term drug administration, enhance the quality of life and more importantly explore more prosperous markets for the plant medicines.

Nano-phytomedicines are prepared from the active phytoconstituents or standardized extracts. The world market for nanomedicine is estimated to reach \$130.9 billion by the fiscal year 2016. It has been widely proposed to combine herbal medicine with nanotechnology. The drug-loaded nanoparticles deliver the herbs (mainly the effective components, regions or the extracts) to the target organ at a sufficient concentration during the entire treatment period. This can accelerate the solubility of the herbs and bioavailability, improve the amphipathic property of the surface of the drug-loaded nanoparticles and permeability, enhance biodistribution and biological effectiveness. Conventional treatments do not meet these requirements. Therefore, integration of the nanocarriers as novel drug delivery systems in the traditional medicine is essential to control more complicated health problems like diabetes, cancer, liver disease, neurological disorders, cardiovascular problems, etc.

Biography

B B Barik is the Professor in the Department of Pharmaceutics, College of Pharmacy, Jazan University, KSA. He has completed his PhD in 1993 from Jadavpur University, Kolkata, India. Earlier, he worked as Professor and Head in the University Department of Pharmaceutical Sciences, Utkal University, Bhubaneswar, India and College of Pharmaceutical Sciences, Berhampur, Odisha. He has published more than 50 papers in reputed journals and presented more than 100 papers in national and international conferences. He received several awards and medals. He is also serving as Reviewer and Editorial Board Member of reputed journals.

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