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Pharmacokinetics, tissue distribution and relative bioavailability of polyphosphazene linked isoniazid-solid lipid nanoparticles

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Tuberculosis (TB) remains one of the oldest and deadliest diseases in the current scenario. The intracellular organism *Mycobacterium tuberculosis*, which mainly resides in mononuclear phagocytes, is responsible for tuberculosis in humans. TB is treated with a multidrug regimen and is thus exceptionally vulnerable to incidences of side effects, unsatisfactory patient compliances and slow improvement of patients. Isoniazid is poorly absorbed from stomach because of its presence in the protonated form at acidic pH. Polyphosphazene is phosphorus-based biodegradable polymers, the uniqueness of this class of polymers lies in the chemical reactivity of phosphorous, which enables a wide range of side chains to be attached for manipulating the biodegradation rates and the molecular weight of the polymer. The present study demonstrates increased bioavailability and reduced decomposition of isoniazid in the stomach by linking it with polyphosphazene. Intestine targeted delivery of drug was obtained via linkage polyphosphazene at different pH. The prepared solid lipid nanoparticulate formulation showed good entrapment efficiency, prolonged drug release and increased bioavailability, justifying their potential for improved drug delivery. Thus we tried our best by our project to reduce the national burden of tuberculosis, which is still a global health challenge.

Biography

RK Narang has 22 years of teaching and research experience. He has guided 22 students of MPharm and 3 of PhD students moreover he had published 25 national and international research papers. He has completed 3 funded research projects worth Rs 58 lacs of different Government funding agencies like DST, AICTE, New Delhi. He has six Indian patents and 2 books in his credit.

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