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Inhalable anti tubercular therapy: Formulation & evaluation of Rifampicin loaded nanospheres embedded micro particulate based dry powder inhaler

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Inhalable anti Tubercular therapy is gaining interest in day to day research. Rifampicin PLGA nanoparticle was formulated in order to decrease the dose, adverse effects and to enhance the target-ability to desired organ. The aim of the current study is to select an optimized method for design of Rifampicin loaded PLGA Nanoparticles by altering the product and process variable in the formulation. Optimization of method was done by Box Behnken Design by investigating the effect of independent variables like polymers, surfactant and sonication time on dependent variables like particle size, entrapment efficiency, drug release profile and zeta potential etc. Based on the obtained results it has been concluded that the trial formulation RIFPG013 with their independent variable shows desired effect on dependent variable i.e. particle size 200nm, entrapment efficiency 80%, sustained drug release above minimum inhibitory level up to 48 hours and better zeta potential -32.3mV with Poly dispersibility index of 0.279, which shows good stability of nanospheres. Thus it was concluded that the emulsion solvent evaporation technique with 7.5% w/w of polymer, 2% w/w surfactant and 30min of sonication time was found to be a best technique for the formulation of Rifampicin loaded PLGA nanospheres.

Biography

Vishnu Vardhan Reddy Beeram pursuing PhD from Vignan's University at Vadlamudi, Guntur in Andhra Pradesh, India. He has Completed Master of pharmacy in Pharmaceutics from Rajiv Gandhi University of Health and Sciences at Bengaluru in Karnataka, India. He has published more than 12 papers in reputed scientific journals and author for a book in life sciences

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