27th International Congress on
Pharmaceutical Biotechnology Research
June 23-24, 2025 | Webinar
Volume : 14

PREPARATION AND EVALUATION OF MICROSPHERES OF NATURAL GUMS CONTAINING AN ANTI-VIRAL DRUG

Bhavana K, Ekshitha G, Rajkiran K
Department of Pharmaceutics, Sri Sivani College of Pharmacy, India

Abstract

The current study concern with the preparation and evaluation of microspheres of naturally occurring gums in the view of effectiveness, biodegradable, easy of availability, cost effectiveness with Lamivudine as model drug. Lamivudine is an active anti-retroviral drug having biological half life of 4-6 hours and 86% bioavailability and licensed for the treatment of HIV and chronic Hepatitis B. Microspheres of Lamuvidine were prepared using xanthan gum and guar gum by solvent evaporation technique. Compatibility study was carried out by using FTIR at the range of 4000 to 400 cm-1 shows no significant change in the characteristic peaks of Lamuvidine and excipients in all the formulation, which indicates the compatibility of Lamuvidine with excipients. The prepared microspheres were analyzed for particle size, surface morphology, % yield, % drug entrapment efficiency, in-vitro drug release studies, in-vitro drug release kinetics and stability studies. Microspheres thus obtained were found to be pale yellow color and free flowing. Micromeritic studies of the prepared formulations are found within the prescribed limits and indicated good flow property. The Scanning Electron Microscopy (SEM) studies inferred the spherical shape and size range of 100µm to 200µm. In-vitro drug release shows decreases as concentration of xanthan gum increases. The release kinetics study revealed that the prepared microspheres were best fitted to the zero order and indicates that drug release from microspheres was diffusion-controlled and that the microspheres were stable. We conclude that, microspheres offer a practical and suitable approach to prepare controlled release of Lamuvidine with natural occurring xanthan gum as rate controlling agent to enhance bioavailability and reduction in dose frequency.

Keywords: Lamivudine; Xanthan gum; microspheres;. Solvent evaporation; and oral controlled drug delivery.

Biography

K.Bhavana has her own experience in valuation and passion for ML and data. The research team built this model after many years of experience in research, evaluation, work in both hospitals and scientific laboratories. This approach meets all the requirements for precise, specific, sensitive diagnostics.

bhavanapharma56@gmail.com

Received: June 6, 2025; Accepted: June 7, 2025; Published: June 24, 2025