

BIOPOLYMERS AND BIOPLASTICS

G V S Rama Krishna
K L University, India

Abstract: The present study reports the synthesis and characterization of biodegradable poly(lactide-co-glycolide) (PLGA) microspheres. The microspheres were synthesized by the solvent evaporation method using PLGA (50:50) as the polymer and PLGA (50:50) as the solvent. The microspheres were characterized by Fourier Transform Infrared (FTIR) spectroscopy, Scanning Electron Microscopy (SEM), and Thermogravimetric Analysis (TGA). The microspheres were found to be spherical in shape and uniform in size. The FTIR spectra showed the characteristic absorption bands of PLGA. The TGA analysis showed that the microspheres were stable up to 300°C. The microspheres were used for the controlled release of a model drug, dexamethasone. The release profile showed that the microspheres could provide a sustained release of dexamethasone for up to 12 weeks. The microspheres were found to be biocompatible and non-toxic. The results of this study suggest that PLGA microspheres are a promising platform for the controlled release of drugs.

krishna.ganduri@kluniversity.in