

Drug Formulation & Bioavailability Congress

September 05-07, 2016 Beijing, China

Evaluation of Etoposide loaded poly(methyl methacrylate) tubular nanostructures

Aysegul Karatas and Aslihan H Algan
Ankara University, Turkey

Etoposide (ETP) is an agent which is widely used in the therapy of various cancers. Its short half-life and toxicity to normal tissues are the major drawbacks in its clinical applications. Polymeric nanoparticulate drug delivery systems are rational carriers to deliver etoposide with higher efficiency and fewer side effects. In addition, tubular shaped drug carriers are found to show a great potential for drug delivery on the basis of promising results regarding particle shape and cellular uptake. Poly(methyl methacrylate) (PMMA)-based particulate carriers have a potential as a drug carrier via different routes of administration. In this study, etoposide loaded PMMA tubular nanocarriers have been developed by template wetting method using porous anodic aluminum oxide membranes as templates. The developed polymeric nanocarriers were evaluated for structural analysis, *in vitro* drug release studies and drug release kinetics. In this work, ETP was successfully loaded with polymeric tubular matrix. The developed RP-LC method was successfully utilized for the determination of ETP entrapped in PMMA nanocarriers. The morphological analysis and elemental analysis of ETP loaded polymeric tubular nanostructures was evaluated by SEM images EDX analysis. Examination of SEM images showed that PMMA nanostructures were obtained successfully in nano dimensions in diameter and with smooth surfaced tubular form. The *in vitro* release profile of ETP from PMMA tubular nanostructures followed a biphasic pattern, which established the sustained release manner subsequent to an initial burst release. The amount of total ETP released at the end of the 24 hours was about 72.2%. Release kinetic of ETP was best fitted into the Korsmeyer-Peppas model whose r^2 is 0.9964 and RMS is 0.0156.

Biography

Aysegul Karatas has completed her PhD and Post-doctoral studies from Ankara University, Turkey. She is an Associate Professor at the Department of Pharmaceutical Technology, School of Pharmacy. She has published more than 25 papers in reputed journals.

Aysegul.Karatas@pharmacy.ankara.edu.tr

Notes: