

Ferulic acid loaded nanospheres: Evaluation of it's apoptosis effect against dalton lymphoma cell line

Smitha K Nair, Niba Ibrahim, Krishnakumar K, and Dineshkumar B

St. James College of Pharmaceutical Sciences, India

The study aimed to formulate ferulic acid loaded nanospheres and evaluate for its anticancer activity using Dalton lymphoma cell line. In this study, nanospheres loaded with ferulic acid was prepared by Nanoprecipitation method. As per the study three formulation were prepared taking different concentration of poloxamer. All the three formulations (f1, f2, f3) were subjected to various characterization steps such as DLS, SEM analysis,

zeta potential, drug loading, entrapment efficiency. *In-vitro* drug release study and release kinetic study were also performed. The formulation was subjected to stability studies followed by anticancer study. The preformulation studies showed there was no chemical incompatibility between the drug and polymer (eudragit L100) The study showed that poloxamer concentration took in 0.50% and the drug-polymer ratio of 1:1 (f2) was more beneficial for giving nanospheres of small size. The zeta potential value indicated the formulation was of good stability. Drug loading, entrapment efficiency, *in-vitro* drug release was found to be more for f2 than f1 and f3. Release kinetic study revealed that prepared nanospheres followed zero order release with super case II mechanism.

Stability studies indicated that formulated nanospheres were stable at room temperature as well as cold temperature. Anti-cancer study by MTT assay revealed that formulated nanospheres had dose-dependent anti-cancer activity against DLA cell line. This study concluded that formulated nanospheres exhibit anti-cancer activity. Also nanospheres can be used as a suitable formulation for poorly soluble drugs for enhanced activity due to its reduced size and improved dissolution rate.

Biography

Smitha. K. Nair has completed her Ph.D. at the age of 35 years from Vinayaka Mission University, Salem, Tamilnadu, India. She is a Professor, Dept. of Pharmaceutics, St. James College of Pharmaceutical Sciences, Chalakudy, Kerala, India. She has published more than 15 papers in reputed pharmacy journals.

knairsmitha@gmail.com