**DGDG Engineered Gemcitabine Loaded Liposome For Hepatocytes (Liver) Targeting**

 Rudraraju Sarada Devi\*, Swati Patel, Shilpi Das, Hetal.P.Thakkar, R.S.R.Murthy

 TIFAC-CORE in NDDS,

Pharmacy Department, Faculty of Technology & Engineering,

The M.S.University of Baroda, Vadodara, Gujarat, India.

Liposomes appear promising to improve both the efficiency and the toxicity profile of Gemcitabine (Anti Cancer).This work describes development and evaluation of Gemcitabine containing liposomes for liver (hepatocyte) targeting using Digalactosyldiacylglycerol (DGDG) as a ligand for hepatocytes targeting. The liposomes were prepared by ethanol injection method and the loading of Gemcitabine was carried out through transmembrane pH gradient method. GL liposomes prepared with 1:4 (drug to lipid molar ratio) and 8:2 (HSPC to cholesterol) with size of 145.2 ± 5.5 nm were considered as optimized batch due to their highest percentage (70.1± 4.5 %) of drug entrapment. Similarly, DGDG liposomes prepared with 10% DGDG by weight of the total lipids (with same drug: lipid, lipid: cholesterol ratios as GL) having drug entrapment 61.2 ± 2.1 % and liposomal size of 167.0 ± 3.7 nm were considered as optimized batch. The stability study was conducted at 2-8˚C which shows stable formulation with respect to particle size growth and % drug entrapment. I*n vivo* study was performed on male wistar rats to determined targeting efficiency of the DGDG liposomal (GDL) formulation in compared to non DGDG liposome (GL) by determining liver drug concentration using HPLC method. After intravenous administration, the drug content in liver after 5 and 24 hrs were found 36.8 % and 29.3 % for GL and 55.2 % and 43.6 % for GDL respectively. The higher retention of GDL in liver would be because of higher cellular uptake of these DGDG liposomes because of ligand induce molecular recognition based cellular up take. There by, DGDG liposomes proving to be more effective for site specific delivery (liver) with better therapeutic effect and can reduced systemic side effects of Gemcitabine.

Biography

Rudraraju Sarada Devi pursuinig M.pharmacy with core subject novel drug delivery system from Maharaja Sayajirao university, Baroda, Gujarat. I am doing project work entitled “vesicular transdermal drug delivery of anti retroviral drug under the guidance of Dr. Hetal.P.Thakkar , she published more than 5 papers in reputed journals.