OMICS International
conferenceseries.com

J Cancer Sci Ther 2015, 7:6
http://dx.doi.org/10.4172/1948-5956.S1.048

5th Asia-Pacific Summit on
Cancer Therapy
July 20-22, 2015 Brisbane, Australia

Emergence of various alternatives for cancer chemotherapy in treating colorectal cancer

Shashank Tummala and M N Satish Kumar
JSS College of Pharmacy, India

Out of the various therapies available for the treatment of colorectal cancer, chemotherapy was considered as the vastly used one owing to its faster availability of the drug mainly in the form of intravenous route by injections. But the main limitation associated with the chemotherapy is its harmful cytotoxic effects to the healthy cells, thereby minimizing the therapeutic effectiveness of various marketed drugs like oxaliplatin, 5-fluorouracil etc. Also cancer cells develop resistance to the above drugs after treatment for some time, which may be termed as multidrug resistance. So various alternatives of delivery systems such as nanoparticulate technology (like solid lipid nanoparticles, liposomes, enteric coated, pH-responsive, polymeric nanoparticles), Immuno conjugates (antibody conjugates, protein conjugates etc.) gained prominence for effective treatment of colorectal cancer by imparting site specificity of the active pharmaceutical ingredient there by reducing the toxicity of healthy cells and increasing the therapeutic efficacy of the drug. The nanoparticulate approach also helps in easy penetrability of the drug into the tumors owing to its decrease in particle size making it as an alternative for chemotherapy. As the particle size gets below 400 nm, it prevents elimination by reticulo endothelial system making it available mostly. Also the use of various lipids in the preparation of nanoparticles helps the drug to penetrate inside the tumor due to their hydrophobic outer layer as opposed to the chemotherapy where the drug is distributed evenly from systemic circulation to all rapidly dividing cells. Also so many drugs suffer from multi drug resistance (example; Cisplatin), which may be due to the efflux of the drug by p-gp glycoproteins present at the tumor cell surface. The alternatives to chemotherapy help the drug in bypassing the multi drug resistance by formulating them as immuno nanoparticles where they are conjugated with antibody thus helping in its intracellular penetration by receptor mediated endocytosis. These all limitations and novel approaches to overcome those limitations of chemotherapy demands for a detailed view on these alternatives.

tummala.shashank@outlook.com

Protective effect of *Euphorbia neriifolia* leaves and its isolated flavonoid against N-nitrosodiethylamine-induced hepato carcinoma in mice

Pracheta Janmeda
Banasthali University, India

Protective effect of hydro-ethanolic extract of *Euphorbia neriifolia* (EN) leaves and an isolated flavonoid (ENF) was investigated against N-Nitrosodiethylamine (DENA)-induced hepatocarcinoma in mice. Experimental mice were pretreated with 150 and 400 mg/kg body wt of EN, 0.5% and 1% mg/kg body wt of butylated hydroxylanisole (BHA) as a standard antioxidant and 50 mg/kg body wt of ENF for 21 days prior to the administration of a single dose of 50 mg/kg body wt of DENA. Levels of liver markers alanine amino-transferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), lipid peroxidation (LPO) and antioxidants superoxide dismutase (SOD), catalase (CAT), glutathione-S-transferase (GST) and reduced glutathione (GSH) were measured to determine the hepato carcinoma caused by DENA. Activities of liver markers and antioxidants were significantly decreased ($p<0.001$) while LPO level was significantly ($p<0.001$) increased after DENA administration as compared with the normal control group ($p<0.001$). Pretreatment with EN and ENF counteracted DENA-induced oxidative stress (LPO) and exerted its preventive effects by restoring the levels of liver markers (AST, ALT and ALP) and antioxidants (SOD, CAT, GST and GSH) in liver tissue. In conclusion, the present study showed significant anti-carcinogenic potential of the hydro-ethanolic extract EN and ENF against DENA induced hepatic carcinogenicity.

pracheta.25@gmail.com