

FABRICATION OF TARGETED FORMULATIONS TO IMPROVE EFFICACY OF THERAPY IN BREAST CANCER TREATMENT

Abstract

In current investigations, folic acid conjugated Polymer lipid hybrid nanocarriers and folate conjugated and dual drug loaded Mesoporous silica nanoparticles were developed for the delivery folate receptor targeted delivery of fulvestrant and exemestane respectively. The results suggested that the developed folate conjugated PLHNCs and folate conjugated quercetin co loaded mesoporous silica nanoparticles with fulvestrant and exemestane have potential to target the breast cancer cell and reduce their toxicity towards normal cells. The formulations showed sustained release of drug and the pharmacokinetic studies also supported the prolonged drug release action. The biodistribution studies for folate conjugated nanoparticles showed increased concentration of drugs within tumor cells. The in vivo anticancer activity carried out on chemical induced rat tumor model showed reduction in overall tumor burden and increased the survival rate of animals. Thus, based on the obtained results it can be said that the formulated nanoparticles were capable of showing ligand responsive intracellular drug release which may help to enhance the efficacy of anticancer treatment and reduce undesirable side effects.