CONCLUSION
In the present investigation an attempt was made to prepare a stomach specific drug delivery system for anticancerous drugs - porous microspheres loaded with methotrexate, doxorubicin, and 5-fluoro uracil. Microspheres loaded with drug were prepared using biodegradable polymers like pectin and casein as emulsifying agent by using emulsification extraction method. Microspheres with high drug entrapment efficiency, desired particle size, percentage buoyancy and controlled drug release rate were successfully prepared. The porous nature of microspheres is responsible for buoyancy of microparticles in gastric condition for longer time resulting in longer residence of released drug in stomach with resultant sustained absorption from stomach. The drug release rate is more at pH 4.0 than at pH 2.0. This indicated that by any means if we increase the pH of stomach more drug release will be obtained. The in vitro inhibitory activity study revealed that combined therapy of three drugs in microspheres form is more effective than single agent and having less toxic effect. The gamma scintigraphic studies carried out on albino mice after oral administration of microspheres showed that higher and longer retention of porous microspheres in stomach indicating their utility in stomach specific delivery. The antitumor activity studies in albino mice revealed that prepared microspheres were able to float on gastric content. The results of drug induced toxicity studies of drug and its microspheres after oral administration showed reduction in incidence of lower body weight which is due to drug toxicity.

Therefore it may be concluded that the performance of developed stomach specific drug delivery system for methotrexate, 5-fu and doxorubicin is promising for the treatment of gastric adenocarcinoma. The formulation provides stomach targeted release of drugs in gastric environment for effective treatment and management of gastric adenocarcinoma. These studies covered a variety of areas of the pharmaceutical development process, including formulation development and drug delivery. Oral administration of porous microspheres of pectin may significantly improve patient
compliance by reducing dosing frequency and help in better management of cancer chemotherapy due to site specific delivery of cytotoxic drug. Similarly, other drugs can also be incorporated to get the local release of the drug in stomach. However, pharmacokinetic studies are required to explore the safety and efficacy of this novel but effective drug system.