3. **OBJECTIVE OF PRESENT INVESTIGATION OF 5-FLUORURACIL AND METRONIDAZOLE**

A large number of drug delivery systems are presently available to treat variety of colon infections. However, therapeutic efficacy of the drug is frequently diminished due to its inability to reach the site of action and maintain stable effective concentration for desired period of time because of altered bowel motility.

- Colorectal cancer is one of the most frequent causes of cancer deaths. 5-fluorouracil (5-FU) is one of the most widely used agent in the first line chemotherapy of colorectal cancer. Large dose of 5-FU are susceptible to Hematopoietic cells and normal epithelial cells of GI tract induced cytotoxicity, which produces sever leucopenia and intestinal toxicity leading to lethal translocation of intestinal microflora. The clinical use of 5-FU is limited by its GI toxicity (stomatitis) and myelotoxicity and oral bioavailability is found to be only 28% in humans. The pharmacokinetic profile of metronidazole indicates that the drug is completely and promptly absorbed after oral administration. reaching a concentration in plasma of about 10 µg/ml approximately 1 hr after a single 500 mg dose. The administration of this drug in conventional tablet dosage form provides minimal amount of Metronidazole for local action in the colon.

- Therefore, Colon targeting of 5-FU will cure this drawback of 5-FU. On other hand, severe systemic toxic effects and shorter half life make this drug particularly suitable to be delivered by local delivery system providing continuously sustained release. Targeted delivery of 5-FU not only reduces systemic side effects, but also would provide an effective and safe therapy for colon cancer with reduced dose and duration of therapy. Metronidazole is choice of drug for intestinal amoebiasis. These drugs are to be delivered to the colon for their effective action against E. histolytica and Metronidazole will adhere to the colonic mucus and epithelial layers, wherein the trophozoites reside in the lumen of the caecum and large intestine. Metronidazole tablets is to be developed as colon-specific drug delivery systems based on polysaccharide chitosan and gives better action on intestinal amoebiasis with reducing Side effects, reducing dose and Targetting action.
PLAN OF WORK AND METHODOLOGY:

1. Exhaustive Literature survey through journals and e-journal
2. Procurement of Drug(s) and Excipient(s)
3. Identification of Drug(s) and Excipient(s)
4. Preliminary screening of formulation variables
5. Interaction study of drug with polymer
6. Optimization of formulation variables using factorial design
7. Evaluation of prepared tablets
8. Statistical analysis
9. Kinetic treatment of dissolution profiles
10. Comparison of optimized batch between First and second factorial design
11. Stability study of optimized batch