2. RESEARCH ENVISAGED & PLAN OF WORK

Cancer is growing concern amongst global population. Anti- cancer drugs are available but their toxicities is well known, so for that need is to develop the effective formulation which should be effective and safe**.**

However, no advancement can be observed in the earlier period against cancer with least toxicities.

Objectives of the current research work were to develop the nanosized particles of anticancer drug for CLL disease which can minimize the dosages as well as the toxicities of current available treatment for the disease.

2.1 EXPECTED OUTCOME OF THE PROPOSED WORK

The proposed research work was thought to be a beginning step in the development of-(D) glucosamine based novel delivery system of preferred anticancer drugs. (D) glucosamine complexation is anticipated to conquer the difficulty of poor drug solubility and nanocarrier will help to attain desired release. These nano-platforms based on amalgamation of strategy are one amongst the current novel approaches and can assist in enhancing the efficiency of drugs. In addition, the delivery system with desired delivery features will lead to a better therapeutic potential in order to meet the needs of the patients at the required time and level.

The present study is an approach for the development, optimization and evaluation of nanosized particles containing anticancer drugs. In order to fulfill this following studies have been undertaken:

1. Review of literature

2. Selection of drug, Poly-(D) glucosamine Chitosan based polymers and delivery system based on physiochemical properties.
3. Drug - anticancer category
4. Poly-(D)glucosamine based polymers Chitosan
5. Preformulation studies
    - Physiochemical characterization of drugs
    - Identification of drug
6. Preparation of Nano-sized particles of selected drugs with Poly-(D)glucosamine based polymers and PLGA polymers

8. In vitro characterization of prepared nanocarrier
    - Particle size and particle size distribution
    - Shape and morphology (SEM and TEM)
    - zeta potential
    - Percentage yield
    - Entrapment efficiency

9. Optimization of various parameters: (by Factorial design using design expert software)
    - Formulation parameters
    - Processing parameters

10. Preparation and evaluation of suitable dosage form
11. Stability studies as per ICH guidelines
12. Compilation and presentation of data