2.0 Aims and Objectives

The present experimental study is proposed to highlights the therapeutic role of curcumin, pectic polysaccharide (CCPS) and encapsulated curcumin chitosan nanoparticle (ECNPs) against sodium arsenite (As^{III}) related oxidative stress, inflammatory response, apoptosis, and infertility in the female repro-toxicity of female Wistar rats.

In this present study the following objectives are fulfilled:

1. Extraction of the pectic polysaccharide (CCPS) from *Momordica charantia* (Bitter gourd) and its characterization.

2. Efficacy testing of CCPS and curcumin on arsenic-exposed liver slices maintained *in vitro* condition. Examine the direct combined effects of CCPS, curcumin and CCPS-curcumin on liver tissue antioxidant status against selective dose of sodium arsenite *in vitro*.

3. Protective effect of Curcumin with different doses against repro-toxicity ailments induced by sodium arsenite in female rats *in-vivo*.

4. Protective effect of CCPS with different doses against repro-toxicity ailments induced by sodium arsenite in female rats *in-vivo*.

5. Remedial effect of curcumin and CCPS against sodium arsenite mediated female repro-toxicity by *in-vivo*

6. Curative effect of CCPS against sodium arsenite mediated female repro-toxicity by *in-vivo*.

7. Preparation of encapsulated curcumin chitosan nanoparticles (ECNPs) and its characterization.

8. Curative effect of different doses of ECNPs against sodium arsenite mediated female repro-toxicity by *in-vivo*.