WORK PLAN AND METHODOLOGY

WORK PLAN:

1. Review of Literature
2. Identification, collection and authentication of the plant
3. Processing of plant
4. Preparation of extracts
5. Animal Ethical Clearance
6. Anti bacterial effect of methanolic extract of Chenopodium album
   - Disk diffusion method
7. Hepatoprotective activity of methanolic extract of Chenopodium album
   - Estimation of biochemical parameters such as ALAT, ASAT,ALP, LDH, TGL, Cholesterol, Total protein, albumin, total bilirubin and direct bilirubin in serum
   - Histopathological study of liver tissue

METHODOLOGY:

1. Review of Literature
   Literature review about plant, Pathophysiology of microbial & liver disorders and experimental models for antibacterial and hepatoprotective activity shall be done from journals, internet, e-Books, e-journals, Patents, official books & codex and library etc.

2. Identification, collection and authentication of the plant
   Fresh leaves, seeds and stems of plant shall be identified and collected from medicinal garden of Shivalik College of Pharmacy, Nangal. Plant shall be authenticated by comparing with the authentic specimen by botanist.

3. Processing of plant
   The impurity from plant shall be removed and leaves, seeds and stems shall be separated from the plant. The parts of plant shall be shadow dried at room temperature and shall be powered by mechanical grinder. The powder shall be sieved by 20mm and 40mm sieve and the intermediate shall be used for extraction
4. **Preparation of extracts:**

   The powders of different parts of plant shall be extracted with methanol using Soxhlet apparatus. Extract of plant will be dried and preserved.

5. **Animal Ethical Clearance**

   Permission shall be taken from Institutional Animal Ethics Committee (IAEC) for conduct of animal study.

6. **Antibacterial Study**

   a. Antibacterial Sensitivity test shall be done by Disk Diffusion Susceptibility Testing (Kirby-Bauer Method).
   
   b. Anti bacterial against gram–ve bacteria (*P. aerogenosa, E. coli*) shall be compared with control antibiotics nitrofurantoin, gentamycin, cefotaxime and norfloxacin.
   
   c. Anti bacterial activity against gram+ve bacteria (*S. aureus and B.subtillus*) shall be compared with standard antibiotics tetracycline, ofloxacin, azithromycin, and piperacillin.

7. **Hepatoprotective evaluation**

   a. Hepatoprotective effect of aqueous extract of *Chenopodium album* shall be studied on carbon tetrachloride induced hepatic damage in rats.
   
   b. Effect of aqueous extract of *Chenopodium album* shall be evaluated on biochemical changes induced by carbon tetrachloride in rats.
   
   c. To investigate whether the aqueous extract of *Chenopodium album* reverses the hepatic damage caused by carbon tetrachloride when subjected as an adjuvant.