**Work Plan and Methodology:**

**Plan of work:**

1. Collection of the *Ficus racemosa* Linn bark and sun shade drying.

2. Identification and authentication of the plant and bark by qualified Botanist.

3. Cleaning and powdering of the bark material.

4. Aqueous and ethanol extraction using Soxhlet extractor.

5. Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in Gentamicin induced nephrotoxicity in rats.

6. Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in cyclosporine induced nephrotoxicity in rats.

7. Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in cisplatin induced nephrotoxicity in mice.

8. Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in lithium carbonate induced nephrogenic diabetes insipidus in rats.
5. Methodology

5.1 Collection and extraction- The stem barks of *Ficus racemosa* will be collected and identified and authenticated by a qualified Botanist. The shade dried and powdered stem bark of *Ficus racemosa* (1 kg) will be extracted with 95% ethanol in a Soxhlet apparatus (55°C; 25–30 cycles), followed by water extraction on a hot water bath (70°C; 3–4 h).

5.2 Animals- Adult male albino rats (150-200g) and Swiss albino mice (25-30g) will be used for the study. The animal care and experimental protocols will be made in accordance with CPCSEA/ IAEC.

5.3 Dose: Dose will be selected as per the previous study.

5.4 Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in gentamicin induced nephrotoxicity in rats.

The rats will be randomly divided into six groups (6 rats/ group). EFR- Ethanol stem bark extract of *Ficus racemosa*. AFR- Aqueous stem bark extract of *Ficus racemosa*. The rats of the group I (normal) will receive only vehicle .The rats of group II will receive gentamicin (80mg/kg i.p) for 8 days. ERF/ ARF (200 and 400mg/kg.p.o) along with gentamicin will be administered to the Gp III,IV,V and VI respectively for 3+8 days.

**Parameters to be studied**- Body weight, kidney weight, urinary Na, serum urea, serum creatinine, Lipid peroxidation, catalase and glutathione estimation and histopathological examination.

5.5 Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in cyclosporine induced nephrotoxicity in rats.

The rats will be selected and randomized into 6 groups, each group consisting of 6 animals. The bark extracts and cyclosporine will be administered orally. Group I rats receives vehicle (control). Group II rats will receive CsA (50mg/kg.p.o) for 21 days. Along with CsA G III, IV, V,VI rats also receives ERF and ARF (200, 400mg/k.g.p.o) for 24 days.
Parameters to be studied- Lipid peroxidation, GSH, SOD, serum urea, serum creatinine, catalase, histopathological examination.

5.6 Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in cisplatin induced nephrotoxicity in mice.

The mice will be selected and randomized into 6 groups, each group consisting of 6 mice. The bark extracts and cisplatin will be administered intraperitoneally. Group I mice receives vehicle (control). Group II mice will receive CP (12mg/kg.p.o) for one day. Along with CsA G III, IV, V,VI mice also receives ERF and ARF (200, 400mg/k.g.p.o) for 2 days.

Parameters to be studied- Serum urea, creatinine, LPO, GSH, catalase, SOD.

5.7 Study of protective effects of ethanol and aqueous stem bark extract of *Ficus racemosa* in lithium carbonate induced nephrogenic diabetes insipidus in rats.

The rats will be selected and randomized into 6 groups, each group consisting of 6 animals. Group I rats receives normal diet (control). Group II rats will receive lithium diet (Lithium chloride 60mM/kg food) for 30 days. Along with lithium diet G III, IV, V,VI rats also receives ERF and ARF (200, 400mg/k.g.p.o) for 3 + 30 days.

Parameters to be studied

Serum sodium and potassium, glucose, blood, urine analysis, determination of protein in the urine, creatinine clearance, urea clearance, daily urine out flow.