I. Preface 1

II. Review of Literature 5

III. Work plan 20

IV. Chapter - I: Survey of Tuberculosis prevalence in Kanyakumari District medical college chest hospital during 2002-2005 21
   1. Introduction
   2. Work Plan
   3. Material and Methods
      3.1 Study area and Population
      3.2 Survey of OP adult patients of Kanyakumari Medical college chest hospital
      3.4 Detection of year wise percentage Tuberculosis outbreaks
      3.5 Detection of seasonal percentage incident of tuberculosis
      3.6 Detection of infection between male and female
      3.7 Detection of percentage incident among different age groups
      3.8 Sputum Examination
   4. Results and Discussion

V. Chapter - II: Isolation and identification of MDR Mycobacterium tuberculosis from Kanyakumari district medical college hospital during September 2002 32
   1. Introduction
   2. Work Plan
   3. Material and Methods
      3.1 Sample collection of sputum from government medical college hospital
      3.2 Identification and isolation of MDR Mycobacterium tuberculosis
      3.3 Ziehl – Neelson staining for initial identification and smear classification
      3.4 Sputum concentration of sputum samples
      3.5 Cultural characterization and identification of microbes using diagnostic media
      3.6 Identification by conventional biochemical tests
      3.7 Sensitivity check and isolation of MDR M. tuberculosis with commercial first line and second line antimycobacterial
3.8 16S rDNA confirmation

4. Results and Discussion

VI. Chapter – III: Screening of antibacterial compounds from chosen marine microalgal extracts and identification of active principles.

1. Introduction
2. Work Plan
3. Material and Methods
   3.1 Collection of marine micro algae
   3.2 Maintenance of Stock culture
   3.3 Composition of Walne’s media
   3.4 Mass culture of different marine micro algae
   3.5 Algal cell count
   3.6 Separation of algal cells
   3.7 Preparation of algal extracts
   3.8 Invitro screening against bacterial isolates with micro algal extracts
   3.9 Concentration dependent growth studies
      3.9.1 Inoculum preparation
      3.9.2 Tube dilution technique
   3.10 Preliminary biochemical analysis of active principles
      3.10.1 Test for Tannins
      3.10.2 Test for Phytotannins
      3.10.3 Test for saponins
      3.10.4 Test for flavonoids
      3.10.5 Test for steroids
      3.10.6 Test for terpenoids
   3.11 Column chromatography
   3.12 Efficacy check with different fractions
   3.13 Thin layer chromatography (TLC)
   3.14 Gas Chromatography-mass spectrophotometer analysis
4. Results and Discussion
VII. Chapter – IV: Acute and sub acute toxicity study of antimycobacterial compounds from marine micro algal extracts in albino mice

1. Introduction
2. Work Plan
3. Material and Methods
   3.1 Acute toxicity studies
      3.1.1. Preparation of sample
      3.1.2. Animal group specification
      3.1.3. Drug Administration
      3.1.4. Determination of LD$_{50}$ value
      3.1.5. Data analysis
   3.2 Sub acute toxicity studies
      3.2.1. Sample preparation
      3.2.2. Animal group specification
      3.2.3. Observation of weekly Body weight
      3.2.4. Observation of mortality & clinical sign
      3.2.5. Observation of food consumption
      3.2.6. Observation of Relative organ weight
      3.2.7. Gross pathology and microscopic examination
      3.2.8. Biochemical Analysis
      3.2.9. Lipid profile analysis
      3.2.10. Serum Enzyme Assay
      3.2.11. Haematology Analysis
      3.2.12. Statistical analysis

VIII. Summary

IX. References

X. Publications