7. SUMMARY AND CONCLUSION

India is one of the largest producers of medicinal herbs in the world. The Indian traditional healthcare system, Ayurveda provides relatively organized database and more exhaustive description of botanical materials, many of which have been used as templates for novel drug development. Nature has provided a complete store-house of remedies to cure all ailments of mankind by providing us drugs in the form of herbs, plants and algae to cure the incurable diseases without any toxic effect.

*Tecomaria capensis*, family Bignonasia is used in traditional system of medicine to relieve pain and insomnia. The plant flowers are reported for anti-oxidant, antimicrobial activity. In *Tecomaria capensis* leaves wound healing activity, antioxidant and antipyretic activity has been reported still now. Very few activity has been investigated. So, I have made an attempt to work on leaves of *T.capensis*. As, leaves of *T.capensis* has potential health benefits, it can be better utilized for nutraceutical and functional food formulations.

In the present study, work was undertaken to study the analgesic, anti-inflammatory, anti-ulcer, hepatoprotective, central nervous system, cytotoxic activity and attempt was also made to identify the active constituent responsible for the pharmacological activity.

- *T. Capsensis* were extracted by using successive solvents.
- In phytochemical investigation, phytoconstituents like alkaloids, flavonoids, cardiac glycosides, saponin glycosides, tannins, steroids, terpenoids, proteins, inulin, volatile oil and mucilage are found to contain in different solvent extracts of *Tecomaria capensis* leaves.
- Maximum amount of phytoconstituent are present in ethyl acetate and ethanol extract. So, for further evaluation these extracts were used.
- TLC was performed for the crude extract by using different mobile phases and ratios. In that, toluene:ethylacetate (7:3). Ratio of mobile phase has showed well separation and Rf value calculated.
- By using column chromatography five different Bio-markers had been isolated. Further characterization and structural elucidation was done.
- In the acute toxicity study, ethylacetate and ethanol extracts of *T. Capensis* leaves were found to be non-toxic and did not produce any adverse effects upto a dose level of 2000 mg/kg B.Wt.
In sub-acute toxicity study, for 28 days extracts treated groups showed no change in body weight, food, and water intake as compared to control group. There was no treatment related adverse effects of *T.capensis* leaves extracts on haematological, biochemical parameters and histopathological studies in rats.

- **Analgesic, anti-inflammatory and anti-ulcer activity** had been done by using proper protocol. In all the activities, ethylacetate extract showed better activity. Comparing to ethanol extract of *T.capensis* leaves.

- **Effect of ethylacetate and ethanol extracts of** *T.capensis* leaves on CCl₄ and paracetamol induced liver toxicity models revealed the hepatoprotective action.

- The experimental observation using actophotometer showed that extracts of *T.capensis* leaves produced significant effect on locomotor activity.

- Experimental findings on ethyl acetate and ethanol extracts of *T.capensis* suggest the extracts showed effects on the muscle coordination, as indicated by the findings with respect to the rotarod apparatus.

- Ethyl acetate and ethanol extracts of *T.capensis* leaves showed significant cytotoxic property, when studied by the *invitro* experimental models such as DLA, EAC and L929 cell line.

- Among the five compounds which have been isolated from the extracts of leaves of *T.capensis* compound 3, 4 - dihydro - 2, 2 - dimethyl - 2H -benzo [h] chromene - 5, 6 – dione and 3, 7 – dim ethyloct - 6 - en - 1 – ol is subjected to cytotoxic and analgesic, anti-inflammatory activity. The compounds were found to show significant activity against tested models.

In conclusion, the present study revealed ethylacetate and ethanol extracts of leaves of *T.capensis* have significant analgesic, anti-inflammatory, anti-ulcer, hepatoprotective, central nervous system depressant, cytotoxic activity in the tested *invitro* and *invivo* models. Further isolated compounds had also shown effective cytoprotection and anti-inflammatory activity. Hence, it may be concluded that the isolated quinone derived from lapachol (a naphthoquinone) may be responsible for few of the therapeutic potential of the studied extract.

Further studies are to be warranted for its safety, efficacy and mechanism of action for its therapeutic potential.