SUMMARY & CONCLUSION

Medicinal herbs are indispensable part of traditional medicine practiced all over the world due to easy access, low cost, least risk and low side effect profile. *Dalbergia latifolia*, Family: - Fabaceae is used in traditional system of medicine and it is regarded as a tonic to the nervous system. The root was reported for antibacterial, antioxidant activites. The present work was undertaken to study neuropharmacological role of *Dalbergia latifolia* in consideration to memory improvement activity to treat the disease releated to cognition and use in learning and memory processes.

- In phytochemical analysis ethanolic extract of roots of *Dalbergia latifolia* showed more number of phytoconstituents.
- TLC and HPTLC of ethanolic extract of *Dalbergia latifolia* were done. The good resolution of spots in TLC and HPTLC shows the presence of various active principles in the extract
- Ethanolic extract of *Dalbergia latifolia* was found have significant inhibition on acetylcholinesterase activity determined by spectrophotometry.
- In the acute toxicity study, ethanolic extract of *Dalbergia latifolia* were found to be non-toxic and did not produce any adverse effects up to dose levels of 5000 mg/kg body weight.
- In the sub acute study for 60 days ethanolic extract 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 *Dalbergia latifolia* extract on hematological, biochemical parameters and histopathological studies in rats.
- General behavior studies on ethanolic extract of *Dalbergia latifolia* has not shown any deviation in treated mice from normal behavior and suggests that ethanolic extract does not possess any neurotoxicity.
- The experimental observation using actophotometer shows that extract of *Dalbergia latifolia* did not produce significant effect on the locomotor activity.
- Experimental findings on ethanolic extract of *Dalbergia latifolia* suggests the extracts did not demonstrate any effect on the muscle coordination, as indicated by the findings with respect to the rota rod experiment.
Study of exploratory activity using hole board apparatus and elevated plus maze in mice reveals that ethanolic extract of *Dalbergia latifolia* treated mice does not possess anxiolytic activity.

The antidepressant evaluation models using forced swim test and tail suspension test demonstrated that ethanolic extract of *Dalbergia latifolia* clearly posses an antidepressant action in mice.

Effect of ethanolic extract of *Dalbergia latifolia* on scopolamine induced interoceptive behavior models revealed the antiamnesic potential of *Dalbergia latifolia*.

In the present study *Dalbergia latifolia* inhibited acetylcholinesterase enzyme, there by elevating acetylcholine concentration in the brain homogenate and ultimately improved memory in mice treated with scopolamine.

Decreased activities of enzymatic antioxidant in mice brain seen in scopolamine induced interoceptive behavior models in mice and were brought back to normal levels by the administration of ethanolic extract of *Dalbergia latifolia*.

In conclusion, the present study revealed ethanolic extract of *Dalbergia latifolia* have memory enhancing property, antidepressant activity and neuroprotective role which may be due to its anticholinesterase potential, effect on neurotransmitter metabolic enzymes and its antioxidant profile. Therefore it seems that *Dalbergia latifolia* may prove to be useful as memory enhancer. Further studies are to be warranted for its safety, efficacy and mechanism of action for its therapeutic potential.