Summary
5. SUMMARY

Presently, plant materials are employed throughout the industrialized and developing world as home remedies, over-the-counter drugs, and ingredients for the pharmaceutical industry. As such, they represent a substantial proportion of the global drug market. Most rural populations, especially in the developing world, depend on medicinal herbs as their main source of primary health care. Owing to this renewed attention to pharmaceuticals, agrochemicals and nutraceuticals (functional foods) obtained from natural sources, the study of bioactive secondary metabolites, traditionally carried out mainly by chemists, has increasingly attracted the attention of pharmacologists, biologists, botanists, agronomists, etc., stimulating cooperative work.

Pharmacognosy includes several fields of expertise: in botany (taxonomy, ethnobotany), in chemistry (extraction, purification and characterization of compounds) and in pharmacology (*in vitro* and *in vivo* biological tests). Ethnopharmacology is considered a part of pharmacognosy that focuses on the study of biological effects of raw materials from traditional medicine.

In the present study, thus *Dichrostachys cinerea* has been characterized as a reference material to a degree so as to ensure the identity, purity, and consistency of the material. The reference material is representative of the species tested. For botanicals, this means that the identity of the plant has been confirmed botanically, macroscopically, microscopically and chemically, by molecular means.

The presence of alkaloid in TLC is confirmed by developing thin layer chromatogram and UV detection. Further, the alkaloid is partially characterised with the help of FTIR, GC/MS, $^{13}$C and $^1$H NMR. It is observed that the alkaloid present belongs to aromatic class and with high molecular weight.

Antibacterial, antimicrobial and anti oxidant studies have also been carried out to prove that the alkaloid is a pharmacologically important one and requires detailed study.