The present study is mainly focussed on the following four important aspects of ethnomedicinal plants, *Rauwolfia densiflora* (Wall.) Benth. ex Hk.f. and tubers of *Stephania wightii* (Arn.) Dunn.

- Pharmaco-chemical characterization of whole plant of *R. densiflora* and tuber of *S. wightii*.
- HPTLC profiles of ethanol extracts of whole plant of *R. densiflora* and tuber of *S. wightii*.
- GC-MS analysis of ethanol extracts of above said plants.
- Pharmacological studies on the ethanol extracts of whole plant of *R. densiflora* and tuber of *S. wightii* for anticancer, antidiabetic, hepatoprotective, fertility, antiinflammatory and CNS activities through animal model.

The results of the qualitative phytochemical study exhibited the occurrence of alkaloids, anthraquinones, catechins, coumarins, flavonoids, phenols, saponins, tannins, terpenoids, sugars, and glycosides from the methanol and ethanol extracts of the above said plants. HPTLC profiles have also confirmed the presence of alkaloids, flavonoids, glycosides, saponins and steroids. From the GC-MS analysis of the ethanol extracts of whole plant of *R. densiflora*, 7 compounds were detected and that of tuber of *S. wightii* showed the presence of 13 compounds.

Ethanol extracts of whole plant of *R. densiflora* and tuber of *S. wightii* have reported to possess anticancer activity. Significant antidiabetic, hepatoprotective activities were observed after the treatment with ethanol extracts of whole plant of *R. densiflora* and tuber of *S. wightii*. Fertility, antiinflammatory and CNS activities were also carried out.