Chapter-6: Discussion
Medicinal plants and derived medicine are widely used in traditional cultures all over the world and they are becoming increasingly popular in modern society as natural alternatives to synthetic chemicals.

At the present juncture, the modern conventional healthcare is burdened with great problems of unsafe medicines, chronic diseases, resistant infections, autoimmune disorders and degenerative disorders of ageing, despite great scientific advances. India possesses almost 8% of the estimated biodiversity of the world with around 0.126% million species. Plant produced compounds are of interest as sources of safer or more effective substitutes for synthetically produced antimicrobial agents.

In present research callus induction was observed from both nodal explants and shoots nodal explants of the plant were cultured on different concentration of hormones (Arce and Jordan, 1988). The callus growth was observed to be remarkably affected by hormone treatment about slowly. Highest callus induction of about 64% was obtained on MS medium supplemented with BAP and Kinetin. It appeared that the presence of a high concentration of BAP enhanced the growth of the plant. Although this combination was used for regeneration but in this particular variety it produced good callus with fresh green color. After 15 to 24 days of observation 31.25% calli showed rapid proliferation and 18% showed poor proliferation. Necrosis was observed in some calli.

A number of different types of compounds are present in various medicinal plants. These compounds are with different chemical structures and the medicinal plants are an exclusive source of these. The work done on these plants pertaining to their antimicrobial activity still has a long way to go.

Some researchers report that there is a relationship between the chemical structures of the most abundant compounds in the tested extracts or essential oils and the antimicrobial activity.

The various extracts of *Simmondsia chinensis* have been found to posse’s antimicrobial activity. All the extracts exhibited significant antimicrobial activity
against all the tested microorganisms; but an exceptionally high activity of the extracts was observed against *Trichophyton rubrum*, *Proteus vulgaris*, *Shigella sonnei* and *Klebsiella pneumoniae*, when compared to the standard drugs (Tetracycline) (Latha *et al*., 2007).

As we see BAP and Kinetin concentrations were taken as 0.0 mg/l, 0.5 mg/l, 1.0 mg/l, 2.0 mg/l, 3.0 mg/l. Highest callogenesis obtained from nodal explants and shoots were by T4 as 64.0% and T1 as 87.0% and percentage regenerations frequency from nodal segments and shoots of *Simmondsia chinensis* (Link) Schneider on different hormonal combinations are 68.2% from T4 which is highest. Subculturing of calli obtained from nodal segments and shoots of *Simmondsia chinensis* (Link) Schneider. Good Subculturing were obtained. Plant regeneration from *Simmondsia chinensis* (Link) Schneider was obtained.