

VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

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A PROJECT REPORT ON



**“Evaluation of Tribal Medicine and active Principle of
Glycosmis mauritiana, (Lam.) Tanaka for Antioxidant and
Anticancer activity against PC-3 Cell lines”**

Carried-out under the scheme,

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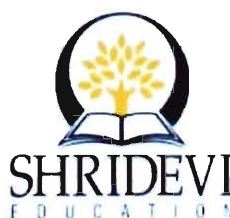
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ABSTRACT

Glycosmis mauritiana is a large shrub, available in the rain forest area of both eastern and western ghats. It is commonly called as “Orange berry” and belongs to the citrus family “Rutaceae”. This plant is used to evaluate the preliminary phyto-chemical, physic-chemical, antimicrobial, and antioxidant activities. The preliminary phyto-chemical analysis for primary and secondary metabolites was done using standard protocols. The presence of alkaloids was detected in the aqueous, acetone, methanolic, ethanolic, and petroleum ether extract. Physico-chemical analysis was made to determine the ash value and florescence properties. The antimicrobial activity was tested against *E-coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* using disc diffusion method. The significant zone of inhibition was observed in acetone extract for *Pseudomonas aeruginosa*, similarly, petroleum ether extract for *Staphylococcus aureus* and methanolic extract for *E-coli*. The Minimum Inhibitory Concentration (MIC) was calculated for both extracts and was significantly superior over antibiotics used in the analysis. Further, Antioxidant activity was tested using DPPH Radical scavenging assay and the activity was increased with increase in concentration of both fractions of *G. mauritiana*. Hence, the formulation of extract of *G.mauritiana* needs to be purified using biophysical techniques towards development of a potential drug/ lead molecule against microbial infection, inflammation and wound healing respectively. Besides, the tribal formulation was collected from the tribal medicine men of BR hills, Chamarajanagara district. During interaction with tribal medicine men, it was found that, the other active plant materials such as, *Costus igneus*, *Dioscorea hispida* and *Curcuma longa* along with *G. mauritiana*. The phyto-chemical analysis reveals active ingredients present in the formulation such as alkaloids, flavonoids, saponins, Phytosterols respectively. The result on antimicrobial activity was most appreciable and the maximum zone of inhibition was noticed against *Pseudomonas aeruginosa*. The antioxidant activity was also significantly higher compare to all other fractions of extracts. In addition, the purification of active components was carried out using gel chromatography in order to justify the presence of bioactive alkaloids. The presence of Anticancer activity was determined using MTT assay, which showed the decrease in cell viability when Methanolic plant extract was tested but for the given concentration of purified sample of the Tribal Formulation, no inhibition of Prostate cancer cells was observed.