VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A PROJECT REPORT ON

"Isolation of Bioactive Principle from *Nothopodytes Nimmoniana*, Blume and its interaction with Snake venom"

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ABSTRACT

Nothapodytes nimmoniana is a small tree, found in peninsular India. Its common name in Kannada is '**Durvasane mara**'. It belongs to the family ***Icacinaceae***. It has been used in our study to evaluate the preliminary phyto-chemical, antimicrobial, antioxidant, anti-venom and anticancer activities. The preliminary phyto-chemical analysis for primary and secondary metabolites was carried out. The qualitative primary metabolite analysis showed presence of protein in cold water aqueous extract followed by ethanolic, methanolic, petroleum ether, ethyl acetate and hexane extracts respectively. Similarly, carbohydrate was present in ethanolic, methanolic, acetone, ethyl acetate, hexane extracts. The qualitative secondary metabolite analysis showed presence of phenols and alkaloids in cold water aqueous extracts followed by ethanolic, methanolic and acetone, steroids and terponoids presence in petroleum ether and ethyl acetate.

The antimicrobial activity was tested for the different solvent leaf extracts against *E.coli*, *Staphylococcus aureus*, *Pseudomonas aeruginousa*, *Salmonella typhi* and exhibited positive results against *Staphylococcus aureus Pseudomonas aeruginosa sps.* The zone of inhibition was found to be 0.7 and 0.8cm respectively. The total antioxidant activity of ethyl acetate leaf extracts was evaluated by ABTS method and IC_{50} value was found to be 8±0.6µg/ml. The anti-venom activity was tested by interacting snake venom protein of *Naja naja* with plant leaf protein and the results indicated that, positive interaction between the proteins of both bio-resources with respect to time frequency. Further, this can be confirmed through analyzing specific enzymes in the respective peaks during interaction along with their probable mechanism. Anti-cancer activity was evaluated against *HeLa* cell lines wherein it was found that there is a presence of bio-active compound that is arresting the growth of these cancerous cells. Therefore, plant has high potential in treating various diseases and disorder which can be explored further for the benefit of human welfare.