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**A Project Report on**

**SECONDARY METABOLITES OF ENDOPHYTIC FUNGI FROM MEDICINAL  
PLANTS: A NEW HOPE FOR ANTITUMOR PROPERTY**

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## ABSTRACT

The term 'endophyte' is an all-encompassing topographical term which includes all organisms that, during a variable period of their life, symptomlessly colonize the living internal tissues of their hosts. Medicinal plants are reported to harbour the secondary metabolite producing endophytes, which in turn provide protection to their hosts from infectious agents. The study of these secondary metabolites explored a strategy for prevention and treatment of cancer. Cancer is the abnormal growth of cells in our body that usually invade and destroy normal cells leading to death. These cells are born due to imbalance in the body and by correcting this imbalance, the cancer may be treated.

The endophytic fungi are isolated from various parts of medicinal plants such as leaves, petals and stem from *Calotropis procera*, *Calotropis gigantea* and *Tinospora cordifolia*. The secondary metabolites produced from these isolates are analyzed and tested for anti-bacterial, anti-fungal and anti-tumor properties.

A total of 48 isolates were obtained from these medicinal plants, 15 from *Calotropis procera*, 17 from *Calotropis gigantea* and 16 from *Tinospora cordifolia*. Various tests such as anti-bacterial and anti-fungal were carried out. Among these, 16 were observed to have anti-bacterial activity and 9 to have anti-fungal activity against the test organisms. Phytochemical screening viz. reducing sugar test, cardiac glycoside test, saponins test, tannin test, Flavonoid test, alkaloid test, steroid test, anti-oxidant test and total phenol content were tested for the plant extracts. Most of the extracts showed positive results.

**Keywords:** *Calotropis procera*, *Calotropis gigantea*, *Tinospora cordifolia*, secondary metabolites, anti-bacterial, anti-fungal, Phytochemical screening, anti-tumor.