ANTIVIRAL AND ANTIBACTERIAL ACTIVITIES OF *PREMNA LATIFOLIA*

MINOR RESEARCH PROJECT

SUBMITTED TO

UNIVERSITY GRANTS COMMISSION
REGIONAL OFFICE, BANGALORE

(MRP(S)-844/10-11/KLCA027/UGC-SWRO)

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**OBJECTIVES**

1. Determination of the toxicity of *Premna latifolia* extract in embryonated eggs
2. Determination of the antiviral activity of *Premna latifolia* extract against Newcastle Disease virus in embryonated eggs
3. Determination of the antiviral activity of *Premna latifolia* extract against Egg drop syndrome virus in embryonated eggs
4. Determination of antibacterial activity of *Premna latifolia* extract using turbidimetric method
5. Determination of antibacterial activity of *Premna latifolia* extract using disc method
6. Phytochemical screening of *Premna latifolia* extract
7. Partial characterization of active component present in extract of *Premna latifolia* by TLC method.

**MATERIALS AND METHODOLOGY**

75% ethanol extract of *Premna latifolia* was used for the present study. Antiviral activity of *Premna latifolia* extract against NDV and EDS virus were checked in embryonated eggs. Candled 7-day old embryonated eggs were inoculated with viruses and drugs and incubated at 37°C. After 5 days from inoculation, eggs were chilled at 4°C for overnight. Growth and morphology of the embryo, morphology of CAM and haemagglutination assay of allantoic fluid were also checked.

Antimicrobial activity of plant extract was investigated against bacterial strains such as *Salmonella typhi*, *Escherichia coli*, *Bacillus cereus*, *Vibrio parahaemolyticus* and *Klebsiella pneumoniae*. Turbidimetric and disc method were used for antibacterial activity assay. In turbidimetric method varying concentrations of the drug with nutrient broth and culture were incubated at 37°C and optical densities were measured at different intervals of time ranging from 1hr, 5hr and 24hr at 530nm. The discs were impregnated with varying concentrations of the extract and dried discs were placed on the agar surface. The petridishes were incubated for 24 hours at 37°C for bacteria. The diameter of zone of inhibition (ZI), activity index, minimal inhibitory concentration (MIC) of the crude plant extract was calculated. Separation of active compounds from *Premna latifolia* extract was done by thin layer chromatography (TLC).
ACHIEVEMENTS

- **Premna latifolia** extract showed significant antiviral activity against Newcastle Disease virus (NDV) and Egg Drop Syndrome (EDS)
- **Premna latifolia** extract showed potential inhibitory action against *Salmonella typhi*, *Klebsiella pneumonia*, *Escherichia coli* and *Vibrio parahaemolyticus*
- Phytochemical analysis of the ethanol extract of *Premna latifolia* showed the presence of phenol, alkaloid and tannins.

PUBLICATIONS