INTRODUCTION

Madhuca longifolia, commonly known as mahwa or mahua belonging to family Sapotaceae, is an Indian tropical tree found largely in the central and north Indian plains and forests. It is a fast growing tree that grows to approximately 20 meters in height, possesses evergreen or semi-evergreen. It is adapted to arid environments, being a prominent tree in tropical deciduous forests in India in the states of Jharkhand, Uttar Pradesh, Bihar, Madhya Pradesh, Kerala, Gujarat. Previous phytochemical studies reported that presence of terpinoids, saponins, flavonoids and glycosides in M.longifolia seeds.

MATERIALS AND METHODS

Chemical used
The following chemicals were used in study-Dimethyl formadine, Ampicillin.

Plant material and extraction
The seeds samples were collected from Tambaram Tamilnadu, India, during December and January 2009 and authenticated by Dr. P. Jayraman, Director of PARC. The specimen sample No.21 is kept at Department, B. Pharmacy College, Rampura, Kakanpur, Godhra, Gujarat.

Preparation of Extracts
The air-dried seeds of powder material (200 gm) of M. longifolia were prepared with water and acetone was placed in reflux condenser and was subjected to extraction by hot percolation method and were defatted with petroleum ether. The extract was evaporated to dryness in vacuo.

Antibacterial Screening
Test organism used
Gram positive organisms: Staphylococcus aureus, Bacillus subtilis
Gram negative organisms: Escheria coli, Pseudomonas aeruginosa

Determinition of MIC
The extracts that showed antibacterial activity were subjected to minimum inhibitory concentration (MIC) assay by serial two fold dilution method. A positive control and negative control were also prepared to confirm the nutritive and sterility properties of the prepared medium respectively. All the tubes were incubated at 37°C for 24 hours. MIC was interpreted as the lowest concentration of the sample, which showed clear fluid without development of turbidity.

RESULTS AND DISCUSSION

The antibacterial activity of the different extracts of Madhuca longifolia showed significant variation as shown in Table 1. Among the two extracts tested acetone extract had greater antibacterial potential, followed by aqueous extract.

Antibacterial potency of the different extracts of Madhuca longifolia against the tested bacterial stains were expressed in MIC as presented in Table 1. The MIC values against these bacteria, and fungal strains ranged from 14.47 to 67.5 µg/ml.

CONCLUSION

The present study indicate that Madhuca longifolia extracts have broad inhibitory activities to pathogenic microorganism and promising to act as potential antibacterial agent from natural sources. The development of oedema in the paw of the rat after the injection of carrageenan is due to release of histamine secretion and prostaglandins like substances. Significantly high anti-inflammatory activity of acetone extract Madhuca longifolia may be due to inhibition of the mediators of inflammation such as histamine, serotonin and prostaglandins. Further laboratory and clinical studies of this plant is required in order to understand better antibacterial and anti-inflammatory principles which will allow scientific community to recommended their use as an accessible alternative to synthetic drugs.

REFERENCES


<table>
<thead>
<tr>
<th>Microorganisms</th>
<th>Zone of Inhibition (mm)</th>
<th>MIC (µg/ml)</th>
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<tbody>
<tr>
<td></td>
<td>Acetone Extract</td>
<td>Aqueous Extract</td>
</tr>
<tr>
<td>S. aureus</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>B. subtilis</td>
<td>19</td>
<td>14.47</td>
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<td>P. aeruginosa</td>
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<td>E. coli</td>
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