EVALUATION OF ANTIMICROBIAL ACTIVITY OF COMBINED EXTRACTS OF CASSIA ALATA TECHLOSPERMUM JASMINOIDES TECOMARIA CAPENSIS

MVG. Sandeep*, Areefa Pattan, V. Divya Gnana Veda, A. Kavitha, S. Ramesh and A. Ravi Kumar

Department of Phytopharmaceutical and Biological Analysis, Bapatla College of Pharmacy, Bapatla 522 101, Andhra Pradesh, India.

ABSTRACT
Chemotherapeutic agent are use for the treatment of the microbes but increasing resistance towards this drugs so require a new agent have antimicrobial activity. So we have studied antimicrobial activity of combined extracts of C.alata T.jasminoides T.capensis. The Combined methanolic extracts of C.alata T.jasminoides T. capensis were found to be posses significant antimicrobial activity against the selected test organisms.

INTRODUCTION
Due to indiscriminate use of antimicrobial drugs, microorganismshabe developed resistance to many antibiotics drugs. They reduced the susceptibility to antibiotics and made it difficult to give treatment against the infectious diseases. The cost of production of synthetic drugs is also high and they produce adverse effect compared to plants derived drugs. Hence much attention has been paid recently to the biologically active compounds derived from plants use in herbal medicine. Traditional medicines hold a great promise as source of easily available effective therapy for infectious diseases to the people, particularly in tropical developing counties, including India. It is in this context that the people use several plants derived preparation to cure infectious diseases. They provide a myriad of natural product, which are used in extensive applications in combating the diseases. In many parts of India, herbal medicine is used for treating various diseases. India possesses a vast number of medicinal plants possessing antimicrobial activity. An attempt was made to study the antimicrobial activity of C.alata T.jasminoides T.capensis methanolic extracts.

EXPERIMENTAL SECTION
Plant collection
The Plants C.alata T.jasminoides T. capensis were obtained from different parts of Andhra Pradesh and plants were authentified and preserved for the further studies.

Plant extraction
Extraction was carried out at room temperature under normal conditions. Combined crude powder of C.alata T.jasminoides T. capensis and passed through sieve 60#. 100gms of the sived powder was weighed accurately and subjected to extraction in a soxhlet apparatus at room temperature using petroleum ether (60-80˚), chloroform and methanol successively. Before extraction with the next solvent the powder was air dried remove the adhering solvent. The extract obtained was filtered, concentrated in rotary flash evaporator and dried in a vacuum oven, percentage yield of each extract was calculated and dried extract
was stored in an air tight container for further studies. Phytochemical test of chloroform and methanolic extract reveals the presence of glycoside, flavonoids and phenolic constituents.

**Preparation of test solution**

Dry extraction were dissolved in sterile Dimethyl sulfoxide (DMSO AR Grade) and prepared final concentration of 5gm/ml for disc diffusion assay for broth micro dilution technique. All extracts were sterilized by passing through a 0.45mcm membrane filter.

**Micro-Organisms**

Bacteria causing infectious diseases both in animals and humans were used in the present study. They were both gram-positive and gram-negative. The bacteria strains used in the study were Escherichia coli NCIM 2109, proteus mirabilis, proteus aureus, Klebsiella pneumonia and Staphylococcus epidermidis. All the bacterial Strains were grown and maintained on nutrient agar slants.

**Screening of Anti microbial activity of C. alata T.jasminoides T.capensis**

Disc diffusion method was carried out to evaluate the antimicrobial activity by using Muller Hinton agar. Sterile filter paper disc Whatmam (No.1 6mm) was impregnated with 100mcL of each extract (10mg/ml and 20mg/ml) to give a final concentration.

**Table 1: Antimicrobial activity of combined methanolic extracts of C.alata T.jasminoides T.capensis against selected micro organisms**

<table>
<thead>
<tr>
<th>MICRO ORGANISM</th>
<th>0.630mg/ml</th>
<th>1mg/ml</th>
<th>2mg/ml</th>
<th>5mg/ml</th>
<th>10mg/ml</th>
<th>Standard*</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.coli</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>p.mirabilis</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>11</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>P.aureus</td>
<td>7</td>
<td>8</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>K.pneumoniae</td>
<td>8</td>
<td>8</td>
<td>11</td>
<td>13</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>s.epidermidis</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>13</td>
<td>18</td>
<td>17</td>
</tr>
</tbody>
</table>

Disc and 2.0mg/disc. The discs are properly placed on already seeded as negative control and standard. Were used as a standard to compare antibacterial and antifungal potential of extracts respectively. All the plants were incubated for 24hrs at 37±0.5˚. The antibacterial activity of the combined methanolic extracts were tested

**RESULTS AND DISCUSSION**

Table 1: Antimicrobial activity of combined extracts of C.alata T.jasminoides T.capensis as diameter of the zone of growth inhibition. The presence of either of glycosides, flavonoids or phenolic compounds of is responsible for antimicrobial activity. Hence it can be concluded combined methanolic extracts of C.alata T.jasminoides T.capensis possess a powerful antimicrobial action against all the microbes were tested against standard. This also stands as a scientific support for the usage of this plant for treating fever and in traditional medicine.

**CONCLUSION**

Microbes of increasing resistance towards this drugs so require a new agent have antimicrobial activity. So it was concluded that the antimicrobial activity of combined extracts of C.alata T.jasminoides T. capensis extracts tested. The Combined methanolic extracts of C.alata T.jasminoides T. capensis were found to be posses powerful antimicrobial activity against the selected test organisms with standard.

**ACKNOWLEDGMENTS**

The Authors are thankful to HOD of Phytophamaceutical and Biological Analysis Lab of Bapatla College of Pharmacy for helpful in the research work.

**REFERENCES**

3. Khan M, Kibara M and oinoloso B. Antimicrobial activity of the alkaloidal