Traditional systems of medicines are prepared from a single plant or combination of more than one plant. Phytochemical screening is responsible for medicinal activity of plant species. Hence in the present study phytochemical screening of some traditional medicinal plants was carried out. Qualitative phytochemical analysis of these plants confirm the presence of various secondary metabolites like saponins, triterpenoids, steroids, anthraquinons, coumarins, fatty acids, tannins, lignins, leucoanthocyanins, emodins, alkaloids, glycosides, flavonoids and phenols. The results suggest that the phytochemical properties for curing various ailments and possess potential antioxidant, anti-inflammatory, antimicrobial and leads to the isolation of new and novel compounds.

Key words: Traditional medicinal plants, Secondary metabolites, Phytochemical screening.

INTRODUCTION

India being a botanical garden of the world and a gold mine of well recorded and traditionally well practiced knowledge of herbal medicine. WHO encourages the traditional drugs because of its less side effects and most of the European countries expanding towards Ayurvedic medicines. Since ancient times, people have been exploring the nature particularly plants in search of new drugs [1]. Plant materials have been used for the treatment of various diseases throughout the world before the advent of modern clinical drugs. The use of medicinal plants still play an important role to cover the basic health needs in the developing countries and the industrialized societies has been traced to the extraction and development of several drugs from these plants as well as from traditionally used folk medicine [2]. Various medicinal properties have been attributed to natural herbs; medicinal plants constitute the main source of new pharmaceuticals and health care products.

Phytochemical screening is very important in identifying new sources of therapeutically and industrially important compounds like alkaloids, flavonoids, phenolic compounds, saponins, steroids, tannins, terpenoids etc [3]. Previously the crude drugs were identified by comparison only with the standard descriptions available, but recently due to advancement in the field of pharmacognosy various techniques have been following for the standardization of crude drugs [4].

Medicinal herbs have been used in one form or another under indigenous systems of medicine. Dubey et al. [5] mentioned that the complete phytochemical investigations of medicinal plants of India should be carried out, because these secondary metabolites are responsible for medicinal activity of the plant.

Number of plants were screened for secondary metabolites for their medicinal activity of plant species. Hence in the present study phytochemical screening of some traditional medicinal plants was carried out. Qualitative phytochemical analysis of these plants confirm the presence of various secondary metabolites like saponins, triterpenoids, steroids, anthraquinons, coumarins, fatty acids, tannins, lignins, leucoanthocyanins, emodins, alkaloids, glycosides, flavonoids and phenols. The results suggest that the phytochemical properties for curing various ailments and possess potential antioxidant, anti-inflammatory, antimicrobial and leads to the isolation of new and novel compounds.

2. MATERIAL AND METHODS

2.1. Collection and identification of Plant material:
The plant samples were collected from Tirumala hills and different locations of Chittoor District. Taxonomic identification of the plants were carried out with the help of Gamble [10] and also compared with the herbarium present in Department of Botany, Sri Venkateswara University, Tirupati, Andhra Pradesh, India.

2.2. Sampling of plant material:
Fresh leaves of 26 different plant species free from diseases were collected during the month of December, 2010. The leaves were washed thoroughly 2-3 times with running tap water, leaf material was then air dried under shade after complete shade drying the plant material was grinded in mixer, the powder was kept in small plastic bags with paper labeling.

2.3. Preparation of extract:
The grinded leaf materials of 5gm weighed separately using an electronic balance and were crushed in 25 ml of sterile water, boiled at 50-60°C for 30 minutes on water bath and it was filtered through Whatman No.1 filter paper. Then filtrate was centrifuged at 4000 rpm for 15 minutes and filtrate was stored in sterile bottles at 5°C for further use [17].

2.4. Phytochemical screening:
The condensed extracts were used for preliminary screening of phytochemicals such as steroids, alkaloids, lignin and phenols [18]; fatty acids, glycosides, triterpenoids and saponins [19]; tannins, leucoanthocyanins and emodins [20], reducing sugars [21]; anthraquinons [22], flavonoids [23], and coumarins [24].

3. RESULTS AND DISCUSSION

The phytochemical screening and qualitative estimation of 26 medicinal plants studied showed that the leaves were rich in tannins and phenols followed by triterpenoids, reducing sugars and flavonoids (Table-I). Saponins and Leucoanthocyanins are present in 12 and 10 plants respectively. Maximum number of secondary metabolites were found in Commiphora caudata, Cassia alata, Delonix regia, Lannea coromandelica, Strychnos nux-vomica and Acaicia auriculiformis. Anthraquinons compounds are present in aqueous extracts of A. auriculiformis, C. alata, C. siamea, C. caudata and L. coromandelica. Anthraquinones are used better stomach ache and in the treatment of diarrhoea [25] and these are an important chemical raw material and organic intermediates that are broadly applied in the field of dyestuff, papermaking, medicines, agricultural chemicals etc. [26]. Emodins are found in leaves of aqueous extracts of B. purpurea, C. alata, C. caudata, D. cinerea and S. nux-vomica. Emodins isolated from a great deal at herbs are an effective constituent with many effects. Lots of pharmaceutical studies have demonstrated that emodins have many biological effects, such as anti-cancer, anti-microbial and anti-inflammatory effects [27]. Flavonoid substances are present in 15 plant species and absent in A. auriculiformis, A. amara, A. lebbeck, A. indica, B. purpurea, C. alata, C. roxburghii, D. regia, G. sylvestre, T. purpurea and Z. mauritiana. Flavonoids have been reported to possess many useful properties, including anti-inflammatory, oestrogenic, enzyme inhibition, antimicrobial, antiallergic, antioxidant, vascular and cytotoxic antitumour activity [28, 29]. Lignins are
Table-I: Phytochemical screening of some important medicinal plants

<table>
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<tr>
<th>S.No.</th>
<th>Name of the plant</th>
<th>Name of the secondary metabolite</th>
<th>Re</th>
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<th>Fl</th>
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<th>Al</th>
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</thead>
<tbody>
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<td>1</td>
<td>Gymnema sylvestre (Retz.) R. Br. ex. schult.</td>
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<td>2</td>
<td>Commiphora caudata (Wt. &amp; Am.) Engl.</td>
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<td>Basella utilis L.</td>
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<td>Citrus aurantium L.</td>
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<td>Citrus aurantium L.</td>
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<td>Citrus reticulata DC.</td>
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<td>Cassia siamea L.</td>
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<td>8</td>
<td>Delonix regia (Boj.ex Hook.) Rafin.</td>
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<td>Saraca asoca (Roth.) wilde.</td>
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<td>Tamarindus indica L.</td>
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<td>12</td>
<td>Tephrosia purpurea (L.) Pers.</td>
<td>Fabaceae</td>
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<td>13</td>
<td>Lontra coromandelica (Houtt.) Müll. Arg.</td>
<td>Anacardiaceae</td>
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<td>Logania siamensis (L.) Hance</td>
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<td>Strychnos nux-vomica L.</td>
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<td>16</td>
<td>Chukrasia tabulata A. Juss.</td>
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<td>Azadirachta indica A. Juss.</td>
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<td>18</td>
<td>Acacia auriculiiformis A. Coun. ex.Benth</td>
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<td>Acacia indica J. R. Gouan</td>
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<td>Althaea rosea L.</td>
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<td>Althaea rosea L.</td>
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<td>Dichrostachys cinerea (L.) Wit. &amp; Am.</td>
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<td>Withania somnifera</td>
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<td>24</td>
<td>Withania somnifera</td>
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<td>25</td>
<td>Citrus limon</td>
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<td>26</td>
<td>Murraya koenigii</td>
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Note: Re – Reducing sugars, Em – Emodins, Fl – Flavonoids, Li – Lignins, St – Steroids, Ti – Triterpenoids, An – Anthraquinons, Co – Coumarins, Fa – Fatty acids, Ph – Phenols, Ta – Tannins, Sa – Saponins, Le – Leucoanthocyanins, Gl – Glycosides, Al – Alkaloids ‘+’ indicates presence; ‘-’ indicates absence

In order to promote Indian herbal drugs, there is an urgent need to evaluate the therapeutic potentials of the drugs as per WHO guidelines [30]. Patwardhan et al. [19] mentioned that 30% of the world wide sales of drugs are based on natural products. Traditional indigenous medicine is limited to small tribal and geographical areas called “little traditions” are an excellent repository of knowledge about medicinal properties of botanical sources. Bioactive extracts should be standardized on the basis of phytochemical compounds [40]. Phytochemical screening of medicinal plants is very important in identifying new sources of therapeutically and industrially important compounds. It is imperative to initiate an urgent steps for screening of plants for secondary metabolites. The present communication attempt to assess the status of phytochemical properties in leaves of traditional medicinal plants to improve the health status of people and also to use in pharmaceutical and nutraceutical products of commercial importance.

CONCLUSION
The medicinal plants appear to be rich in secondary metabolites, widely used in traditional medicine to combat and cure various ailments. The anti-inflammatory, antispasmodic, analgesic and diuretic can be attributed to their high phenols, tannins, triterpenoids, saponins and flavonoids. Exploitation of these pharmacological properties involves further investigation of these active ingredients by implementation of techniques like extraction, purification, separation, crystallization and identification.

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N. Savithramma et al. / Journal of Pharmacy Research 2011,4(10),3414-3416


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