Phytochemical Investigation of Adenocalymma alliaceum: A Review

Ravi P. Pandey* and Brij K. Singh+
*Department of Chemistry, Buddha P G college, Kushinagar, UP, India-274403
+ Department of Chemistry, S D P G College, Mathlar, Deoria, UP. India-274502

Abstract
With a view to obtain new and better drug from natural source chemists and biologists have been attracted towards the traditional system of medicines for the past few decades. Chemical composition of plant derivatives includes diallyl disulphide, diallyl trisulphide, alliin, allicin, propylallyl, divinyl sulfide, diallyl sulfide, dimethyl sulfide, daucosterol, beta-sitosterol, fucosterol, stigmasterol, iridoides and isothiocyanates, naphthaquinone, alkaloids, saponins, flavones. The present paper is a study of medicinal properties of the some of the species belonging to family Bignoniaceae commonly used by the people in the rural areas and compounds isolated from Adenocalymma alliaceum.

Keywords
Adenocalymma Alliaceum

INTRODUCTION
Modern synthetic medicines are not providing adequate relief to common people of developing countries due to their soaring prices and complicated side effects. With a view to obtain new and better drug from natural sources, therefore, chemists and biologists have been attracted towards the traditional system of medicines for the past few decades. The Ayurvedic and Unani systems of old Indian medicines have been alleviating human ailments for thousands of years. Further, it is also true that these medicines are harmless and cheaper. During the early years of development of human civilization, man had started using vegetable, animal and mineral resources available around him for medicinal, edible and poisonous purposes. He found that some plants had curative values in the treatment of different diseases. However, the use of plants as medicines is also dependent on curious and complex blend of experience, faith, superstitions, and sometimes wishful thinking. With the passage of time, it is a worldwide realization that naturally occurring compounds offer new and effective medicinal ingredients. This led to the involvement of workers all over the world in exploration of flora and fauna and their application for the treatment of human diseases. It gave directions to the development of a number of scientific and philosophic concept of ancient medicines, as compiled in Ayurveda in India, Pun Tea of China, History of Plants of Greek, Ebera Pepyrus of Egypt, Destmplicibus of Rome and Arabic Herbal of Arabs. These resources have served as rich reservoirs for basic reference to medicinal chemistry and still retain their importance as sources of several useful and harmless drugs. Extracts of some plants even in crude form are known to exert remarkable effects over biological systems. Such effects are due to certain chemical constituents present in plants and these are commonly known as active principles.” In spite of tremendous development of synthetic drugs in the past few decades, active principles of plants

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Ravi P. Pandey* and Brij K. Singh
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used in medicines have been isolated and characterized. These drugs are believed to be safer to use and pose less problems of side effects as compared to synthetic ones. This is the reason why plants have always been a major source for therapeutic agents in all systems of medicine. Because of different climatic and soil condition India offers richest sources of a variety of vegetation including medicinal plants. The present paper is a study of medicinal properties of the some of the species belonging to family Bignoniaceae commonly used by the people in the rural areas and compounds isolated from Adenocalymma alliaceum. The plant of Amphicome emodi Lindi, B. acida (H.Gentry, A.H.Gentry, Adenocalymma alliaceum (Lam.) Miers, Adenocalymma obovatum Urb., Adenocalymma pachypus (K.Schum.) Bureau & K.Schum., Adenocalymma sagotti Bureau & K.Schum., Anemopaegma pachypus K.Schum., Bignonia alliacea Lam., Pachyptera alliacea (Lam.) A.H.Gentry, Pseudocalymma alliaceum var. macrocalyx Sandwith, Pseudocalymma pachypus (K.Schum.) Sandwith, Pseudocalymma alliaceum var. macrocalyx Sandwith, Pseudocalymma pachypus (K.Schum.) Sandwith, Pseudocalymma sagotti (Bureau & K.Schum.) Sandwith, Pseudocalymma sagotti var. macrocalyx (Sandwith) L.O.Williams. It is widely found in India. A. alliaceum is an evergreen, climbing shrub and is commonly grown as ornamental plant in gardens. It is generally called ‘Garlicbush’ or ‘Lahsunlata’ (Hindi). The plant flourishes well on a rich loamy soil in hot and moist conditions. It is commonly propagated by layering but also cultivated by cuttings. It’s leaves possess intense garlic smell and are used in medicines. The juice is poisonous to leaches and is phytotoxic to the host plant and is used for preserving fishing nets. D. falcata Seem. is reputed to cause abortion and the bark is started to be used as a fish poison.

Some species of genus Adenocalymma have also been reported to possess medicinal value. Adenocalymma sagoti and A. peruvianus are used in combating infections. Adenocalymma alliaceum Mart. is a South America (Brazil) dicot and has migrated to other parts of the world. The web page www.theplantlist.org describes fourteen scientific name (Adenocalymma alliaceum and its 13 synonyms) The whole list is: Mansoa alliacea (Lam.) A.H.Gentry, Adenocalymma alliaceum (Lam.) Miers, Adenocalymma obovatum Urb., Adenocalymma pachypus (K.Schum.) Bureau & K.Schum., Adenocalymma sagoti Bureau & K.Schum., Anemopaegma pachypus K.Schum., Bignonia alliacea Lam., Pachyptera alliacea (Lam.) A.H.Gentry, Pseudocalymma alliaceum var. macrocalyx Sandwith, Pseudocalymma pachypus (K.Schum.) Sandwith, Pseudocalymma alliaceum var. macrocalyx Sandwith, Pseudocalymma pachypus (K.Schum.) Sandwith, Pseudocalymma sagotti (Bureau & K.Schum.) Sandwith, Pseudocalymma sagotti var. macrocalyx (Sandwith) L.O.Williams. It is widely found in India. A. alliaceum is an evergreen, climbing shrub and is commonly grown as ornamental plant in gardens. It is generally called ‘Garlicbush’ or ‘Lahsunlata’ (Hindi). The plant flourishes well on a rich loamy soil in hot and moist conditions. It is commonly propagated by layering but also cultivated by cuttings. It’s leaves possess intense garlic smell and have been reported to have many biological activities. A volatile oil obtained from leaves showed strong fungitoxic activity and was found to be more active than some commercial fungicides. It is also found to be non-phytotoxic to the host plant stimulatory to nitrate reductase activity and able to prevent leaf-spot disease of paddy. Further, the aqueous extract has exhibited good antimicrobial activity.

chelonomides DC are prescribed as a cooling drink in fevers. Its tender fruits and flowers are used as vegetable by the natives of Western India. Extract obtained from the wood of Stereospermum xylocarpm Weight and Heterophragma roxburghii DC is recommended as a remedy for scaly eruption on the skin. Seeds of Dolichandrone rheedi Seem. with ginger and Pavetta roots are administered in spasmodic affections and a decoction of its bark is used for preserving fishing nets. D. falcata Seem. is reputed to cause abortion and the bark is started to act as a fish poison.

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Compounds isolated from *Adenocalymma alliaceum*: The compounds isolated by different workers are summarised in Table 1

<table>
<thead>
<tr>
<th>Compound Isolated</th>
<th>Plant Parts used</th>
<th>Extract</th>
</tr>
</thead>
<tbody>
<tr>
<td>allyl methyl trisulfide, allyl propyl trisulfide, dithiacyclopentene, allyl propyl disulfide, allyl methyl trisulfide, allyl isobutyl sulfide, allyl isobutyl disulfide, diallyl monosulfide, diallyl disulfide, diallyl sulfide, diallyl trisulfide, diallyl tetrasulfide, 3-vinyl-1,2-dithi-4-en, allyl tri-sulfite, tetrasulfite, di-2-propenil, trisulfide, di-2-propenyl, 1-Octen-3-ol, 1-octen-3-ol, allyl methyl disulfide, allyl methyl tetrasulfide, propenyl propyl trisulfide, 3-vinyl-1,2-dithi-4-en, 3-vinyl-1,2-dithi-5-ene, trithiacyclohexene, 2-methyl-2-pentenal, cis-dipropenyl disulfide, trans-dipropenyl disulfide, methyl salicylate, 3,4-dimethyl-2,3-di hydrothiophen-2-one, nonanethiol, disoamyl disulfide</td>
<td>Leaves</td>
<td>Essential oil</td>
</tr>
<tr>
<td>diallyl disulfide, diallyl tetrasulfide, diallyl trisulfide, 1-octen3-ol</td>
<td>Flowers</td>
<td>Essential oil</td>
</tr>
<tr>
<td>Allin, β-amyrin, apigenin, apigenin-7-glucoside, apigenin-7-glucuronide scutellarein-7'-glucuronide, apigenin-7-glucuronyl glucuronide, apigenin-7-O-methylglucuronide, cyanidin-3-rutinoside, β-sitosterol, β-sitosteryl d-glucoside, luteolin, 7- Omethylscutellarein, ursolic acid</td>
<td>Flowers</td>
<td>Methanol extract</td>
</tr>
<tr>
<td>benzaldehyde (54.8%), benzyl thiol (20.3%) dibenzyl disulphide (18.0%)</td>
<td>Inflorescences</td>
<td>Not reported</td>
</tr>
<tr>
<td>9-methoxy-α-lapachone, 4-hydroxy-9-methoxy-α-lapachone</td>
<td>Wood (bark)</td>
<td>Dichloromethane</td>
</tr>
<tr>
<td>p-coumaric acid, ferulic acid and resveratrol</td>
<td>Plant</td>
<td>Ethyl acetate extract, Aqueous Infusion</td>
</tr>
<tr>
<td>9-methoxy-α-lapachone, allin, allicin, allylsulfoxide, diallyl sulfide, divinyl sulfide, propyl allyl disulfide, stigmasterol alkaloid, ferulic acid, flavonoids, cumarin, p-coumaric acid saponin, resveratrol, sulfur compounds tannin, terpenes, caffeic acid</td>
<td>Not reported</td>
<td>Not reported</td>
</tr>
</tbody>
</table>

Conflict of Interest: No conflict of interest

REFERENCES: