



## RESEARCH ARTICLE

### COMPARATIVE PHYTOCHEMICAL SCREENING OF ALL PARTS OF *CELASTRUS PANICULATUS* WILD BY USING ETHANOLIC EXTRACT

1,\*Kamalinee A. Deodhar and 2Nanda W. Shinde

<sup>1</sup>K.L.E Society's Science and Commerce College, Kalamboli, Sector 1, Navi Mumbai, 410210, Maharashtra

<sup>2</sup>K.V.Pendharkar College of Arts, Science and Commerce, MIDC, Dombivali, 421203

#### ARTICLE INFO

##### Article History:

Received 15<sup>th</sup> December, 2015

Received in revised form

29<sup>th</sup> January, 2016

Accepted 07<sup>th</sup> February, 2016

Published online 31<sup>st</sup> March, 2016

##### Key words:

Phytochemical analysis,  
*Celastruspaniculatus*,  
Alkaloids,  
Preliminary screening.

#### ABSTRACT

Medicinal plants besides therapeutic agents are also a big source of information for a wide variety of chemical constituents which could be developed as drugs with precise selectivity. These are the reservoirs of potentially useful chemical compounds which could serve as newer leads and clues for modern drug design (Vijaylakshmi and Ravindran, 2012). The most important of these bioactive constituents of plants are alkaloids, tannins, flavonoids and phenolic compounds (Doss, 2009). Correlation between the phytoconstituents and the bioactivity of plant is desirable to know for the synthesis of compounds with specific activities to treat various health ailments and chronic diseases as well (Pandey *et al.*, 2013). Owing to the significance in the above context, such preliminary phytochemical screening of plants is the need of the hour in order to discover and develop novel therapeutic agents with improved efficacy. The present study deals with the screening based on phytochemical tests of *C. Paniculatus* in presence of ethanolic extracts.

Copyright © 2016, Kamalinee Deodhar and Nanda W. Shinde. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Kamalinee A. Deodhar and Nanda W. Shinde, 2016. "Comparative Phytochemical screening of all parts of *Celastrus paniculatus* wild by using Ethanolic extract", *International Journal of Current Research*, 8, (03), 28889-28891.

## INTRODUCTION

Medicinal plants contain some organic compounds which provide definite physiological action on the human body and these bioactive substances include tannins, alkaloids, carbohydrates, terpenoids, steroids and flavonoids (Edoga *et al.*, 2005). These compounds are synthesized by primary or rather secondary metabolism of living organisms. Secondary metabolites are chemically and taxonomically extremely diverse compounds with obscure function. They are widely used in the human therapy, veterinary, agriculture, scientific research and countless other areas (Vasu *et al.*, 2009). A large number of phytochemicals belonging to several chemical classes have been shown to have inhibitory effects on all types of microorganisms in vitro (Cowan, 1999). Plant products have been part of phytomedicines since time immemorial. This can be derived from barks, leaves, flowers, roots, fruits, seeds (Criagg and David, 2001). Knowledge of the chemical constituents of plants is desirable because such information will be value for synthesis of complex chemical substances (Mojab *et al.*, 2003; Parekh and Chanda, 2007 and 2008). In the present work, qualitative phytochemical analysis is carried out in all parts of *Celastrus paniculatus* using ethanolic extracts.

\*Corresponding author: Kamalinee A. Deodhar,  
K.L.E Society's Science and Commerce College, Kalamboli, Sector 1,  
Navi Mumbai, 410210, Maharashtra

## MATERIALS AND METHODS

### Collection and authentication

The plant material of *C. paniculatus* was collected from the forest areas of 3 different localities i.e. Satara, Murbad and Kokan in month of August to October when it is flowering and fruiting. Care was taken to select healthy, full grown plants and normal organs. The plant was authenticated from Blatter Herbarium, Department of Botany, St.Xavier's College, Mumbai. (Specimen Accession No.1235 of H. Satapau). The voucher specimen of the plant is deposited at Research laboratory, Dept. of Botany, K.V. Pendharkar College, Dombivli (E) for further reference.

**Extraction of active constituents:** About 10 gms of powdered drug of all the parts was extracted with ethanol using soxhlet apparatus. The extraction was carried out until the extractive became colourless. The excess solvent was removed from extractive by evaporation over boiling water bath. The dried extract was kept in desiccator and used for identification of active constituents present.

**Phytochemical analysis:** The following qualitative chemical tests for identifying various constituents were carried out by using ethanolic extracts prepared for all parts (Dasgupta *et al.*, 2013; Kokate *et al.*, 2008)



Fig. 1. *Celastrus paniculatus* seeds and flowers

Observation Table

S.No	Phytoconstituent and Test	Expected Observation	Ethanolic Extract			
			Seed	Leaf	Stem	Root
1.	Alkaloid					
	Extract + Mayer's reagent	White Creamish ppt.	++	++	++	++
2.	Extract + Dragandroff's reagent	Orange colour	++	++	++	++
	Carbohydrates					
3.	Extract + Molisch's reagent	Purple-Violet	---	---	---	---
	Extract + Benedict's reagent	Reddish-brown ppt.	---	---	---	---
4.	Glycosides					
	Extract + Anthrone + H <sub>2</sub> SO <sub>4</sub> + heating	Purple-green colour	---	---	---	---
5.	Protein & Amino acids					
	Extract + Ninhydrin reagent	Blue-violet colour	---	---	---	---
6.	Sterols and triterpenoids					
	Extract + Libermann test	Bluish green	++	++	++	++
7.	Phenolic compounds					
	Extract + FeCl <sub>3</sub> test	Blue-green colour	---	---	---	---
8.	Flavonoids					
	Extract + Shinoda test	Pink scarlet, crimson	---	---	---	---
9.	Tannins					
	Extract + FeCl <sub>3</sub> test	Blue-green ppt.	++	++	++	++
10.	Extract + Vanillin- H <sub>2</sub> SO <sub>4</sub>	Purple-red colour	++	++	++	++
	Saponins					
11.	Froth forming test	Stable froth	---	---	---	---
	Fixed oils & Fats					
12.	Spot test	Appearance of stain	---	---	---	---
	Mucilage & Gums					
13.	Extract + Ruthenium Red	Pink colour	---	---	---	---
	Anthraquinone					
14.	Extract + Benzene+ 1% NH <sub>4</sub>	Pink, red or violet colour	---	---	---	---

### Observation

The preliminary phytochemical analysis showed presence of alkaloids and tannins in all the ethanolic extracts of all plant parts. It also showed presence of Sterols and triterpenoids in all ethanolic extracts of all plant parts. It indicates that these two components are present prominently in all parts of *Celastrus paniculatus*.

### Conclusion

The active components present in ethanolic extract of all parts of *C. Paniculatus* are alkaloids, tannins and sterols and triterpenoids.

### REFERENCES

- Cowan, M.M. 1999. Plant products as antimicrobial agents. Clin. Microbiol. Rev.
- Criagg, G.M., David, J.N. 2001. Natural product drug discovery in the next millennium. J. Pharm. Biol., 39: 8-17.
- Dasgupta S, Parmar A, Patel H. 2013. Preliminary phytochemical studies of *Kalanchoe Gastonis- bonnieri*. Int J Pharm Bio Sci., 4:550-557.
- Doss, A. 2009. Preliminary phytochemical screening of some Indian medicinal plants. Anc Sci Life., 29:12-16.
- Edoga, H.O., Okwu, D.E., Mbaebie, B.O. 2005. Phytochemicals constituents of some Nigerian medicinal plants. Afr. J. Biotechnol., 4(7): 685-688.

- Kokate, C. K, Purohit, A. P. and Gokhale, S. B. 2008. Practical Pharmacognosy, 41st edition; Nirali Prakashan, Pune.
- Mojab, F., Kamalinejad, M., Ghaderi, N., Vanidipour, H.R. 2003. Phytochemicals screening of some species of Iranian plants. *Iran. J. Pharm. Res.*, 3: 77-82.
- Pandey P, Mehta R, Upadhyay R. 2013. Physico-chemical and preliminary phytochemical screening of *Psoralea corylifolia*. *Arch Appl Sci Res.*; 5:261-265.
- Parekh, J., Chanda, S. 2007. Antibacterial and phytochemical studies on twelve species of Indian medicinal plants. *Afr. J. Biomed. Res.*, 10: 175-181.
- Parekh, J., Chanda, S. 2008. Phytochemicals screening of some plants from western region of India. *Plant Arch.*, 8: 657-662.
- Vasu, K., Goud, J.V., Suryam, A., Singara, Chary, M.A. 2009. Biomolecular and phytochemical analyses of three aquatic angiosperms. *Afr. J. Microbiol. Res.*, 3(8):418-421.
- Vijyalakshmi R, Ravindran R. 2012. Preliminary comparative phytochemical screening of root extracts of *Diospyros ferrea* (Wild.) Bakh and *Arva lanata* (L.) Juss. Ex Schultes. *Asian J Plant Sci Res.*, 2:581-587.

\*\*\*\*\*