ISSN: 0976-3031

Available Online at http://www.recentscientific.com

International Journal of Recent Scientific Research
Vol. 7, Issue, 6, pp. 12180-12181, June, 2016

International Journal of Recent Scientific Research

Research Article

QUANTIFICATION OF POLYPHENOLS, ALKALOIDS AND EVALUATION OF PHYSIOCHEMICAL PARAMETERS OF FICUS INFECTORIA ROXB.STEM BARK

Preet Amol Singh, Junaid Niazi and Harbans Singh

Bahra Institute of Pharmacy RayatBahra College, Patiala, Punjab, India

ARTICLE INFO

Article History:

Received 11th March, 2016
Received in revised form 14th April, 2016
Accepted 18th May, 2016
Published online 28th June, 2016

Key Words:

Ficusinfectoria Roxb., Physiochemical properties, quantification, polyphenols, alkaloids.

ABSTRACT

The present study was carried out to evaluate physicochemical parameters and quantification of polyphenols and alkaloids present in the stem bark extract of *Ficusinfectoria*. Physicochemical parameters such as ash value (total ash, acid insoluble ash), loss on drying, alcohol soluble extractive, water soluble extractive were evaluated using API guidelines and were found in acceptable range. The concentrations of alkaloids and flavonoids were determined by using gravimetric method. The determination of the total phenolic content was carried out by using spectroscopic method, while tannins were determined by using titrimetric method. Physio-chemical properties can provide valuable information regarding plant authentication and certainly quantification of polyphenols and alkaloids are helpful in laying a firm foundation for the utilization of plant extracts in the animal studies. *Ficusinfectoria* was found to possess good quantity of tannins as compared to other polyphenols and alkaloids present in it.

INTRODUCTION

Ficusinfectoria Roxb. (Fam. Moraceae) is a large spreading tree, with occasional aerial roots, found nearly throughout the country and commonly planted as an ornamental tree. Plant is commonly known as Pakad in India but is also referred by many names according to different linguistic regions in India. In Bengali it is known as (Pakur), Kannada (Karibasari), Gujrati(Pepli), Malayalam(Itti), Oriya (Pakali). Bark is rough, occurring in flat to curved, quilled pieces, external surface is ash or whitish-grey. Internal surface is rough, fibrous, longitudinally striated, reddish-brown in colour (API-II 2001). Stigmasterol, α-Amyrin, bergapten, stigmasterol-3-β-D-glucoside, kaempferol-3-O-β-D-glucoside, benzyl-glucoside, quercitin-3-O-β-D-glucoside, 6-Hydroxykaempferol-7-O-β-D-glucoside, and quercitin-3-O-β-D-rutinoside are the main isolated compunds present in the plant (Backheet *et al* 2001). Phytochemical analysis shows the presence of carbohydrate, glycoside, alkaloid, protein, amino acid, phytosterol, tannin & flavonoids (Kumar *et al*.2012).

MATERIALS AND METHODS

Physiochemical Analysis

Physiochemical parameters such as loss on drying, ash values (total ash and acid insoluble ash) and extractive values (water soluble and alcohol soluble extractives) were performed according to API guidelines (API-II 2001).

Quantification of polyphenols and alkaloids

After qualitative analysis, screening was done to ascertain the quantitative presence of polyphenols and alkaloids in *Ficusinfectoria* Roxb. plant. The concentrations of alkaloids and flavonoids in these extracts were determined by using gravimetric method (Harborne 1973). The determination of the total phenolic content was carried out by using spectroscopic method (Madaan *et al*. 2011), while tannins were determined by using titrimetric method (Patel *et al.* 2011).

RESULTS AND DISCUSSION

Physiochemical parameters

The ash values of a drug give an idea about the earthy, inorganic and other impurities present in the drug. So it is useful for checking the genuity of the raw samples. Physiochemical parameters were evaluated and were found to be in the desired range as per API, WHO guidelines and present literature which indicated that the samples were of better quality. The results are tabulated in Table 1.

Table 1Represents the physiochemical parameters of stem bark of *Ficusinfectoria Roxb.*

*Corresponding author: **Preet Amol Singh***
Bahra Institute of Pharmacy RayatBahra College, Patiala, Punjab, India

Physiochemical parameters	*Ficusinfectoria* Roxb. (bark) %w/w*
Total ash	6.4435 %
Acid insoluble ash	0.5177 %
Alcohol soluble extractive	15.8425 %
Water soluble extractive	13.9328 %
Loss on drying	8.1232 %

Quantification of polyphenols and alkaloids

The bark of *Ficusinfectoria* Roxb. had shown positive results of polyphenols and alkaloids. It was investigated that *Ficus infectoria* Roxb. possessed higher amount of tannins than other polyphenols and alkaloid as shown in Table 2.

Table 2 Represents quantity of polyphenols and alkaloids

Name of plant	Total phenolic content %w/v	Tannins %w/v	Total alkaloids %w/w	Flavonoids %w/w
Ficusinfectoria(bark)	2.2	5.7	1.54	3.879

CONCLUSION

In the present study, physiochemical parameters like ash and extractive values were studied, it can be concluded that *Ficusinfectoria* Roxb. Raw sample was almost devoid of adulteration. The study gave us the chassis to utilize the plant sample for the further analytical and animal studies. The quantification of polyphenols and alkaloids strengthened our rationale to utilize the plant in a more appropriate way to get best results pharmacologically. Evidently, higher amount of tannins and flavonoids motivated us to screen the plant for its anti-inflammatory and analgesic activity which will be concluded in the future studies.

Acknowledgement

Authors are thankful to Dr.N.B.Brindavanam, Dr.G.P.Kimothi, Mr.Mahesh Joshi and Dr.C.S.Rana and Mrs. SaksheeBajpaifor their valuable help in completion of the work. Authors specially acknowledge the contribution of Dabur DRDC, Ghaziabad, India.

References

1. Ayurvedic Pharmacopoeia of India, (2001).Ministry of Health and Family welfare, Department of AYUSH Government of India.1 (2): 143-144.
2. Backheet, E.Y, Ahmed, A.S. andSayed H.M., (2001). Phytochemical study of the constituents of the leaves of *Ficusinfectoria* (Roxb.). *Bull. Pharm.Sci,* 24(1): 21-27.
3. Kumar Ashok, Jha, K.K., Kumar, D., Agrawal, A., and Gupta, A., (2012). Preliminary Phytochemical Analysis of Leaf and Bark (Mixture) Extract of *FicusInfectoria* Plant. *The pharma innovation*, 1(5): 71-76.
4. Harborne, J.B., (1973). Phytochemical methods. London: Chapman and Hall Ltd.
5. Madaan, R., Bansal, G., Kumar, S. and Sharma, A., (2011).Estimation of total phenols and flavonoids in extracts of Actaeaspicata roots and antioxidant activity studies. *Indian J Pharm Sci*, 73(6): 666-9.
6. Patel, A.V., Patel, K.N., Patel, M.S., (2011).Validated simple redox titration method for the estimation of gallotannins in marketed ayurvedicchurna preparations. *J Chem Pharm Res*, 3(6): 293-9.

****

How to cite this article:

Preet Amol Singh, Junaid Niazi and Harbans Singh.2016, Quantification of Polyphenols, Alkaloids and Evaluation of Physiochemical Parameters of Ficus Infectoria roxb. Stem Bark. *Int J Recent Sci Res.* 7(6), pp. 12180-12181.