

SECONDARY METABOLITES DETERMINATIONS QUALITATIVELY FROM BARK OF BUTEA MONOSPERMA AND EUCALYPTUS GLOBULUS

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Abstract: Bark is the outermost layer of stems and roots of woody plants. A plant with bark includes trees, woody vines and shrubs. In the present investigation we were taking bark of *Butea monosperma* and *Eucalyptus globulus*. From these plants we determined secondary metabolites qualitatively using solvents like Water, n-hexane and Ethyl Acetate.

Water, n- Hexane and Ethyl Acetate extract of bark of *Eucalyptus globulus* contains more number of phytochemicals as compared to *Butea monosperma*.

Keywords: *Butea monosperma* and *Eucalyptus globulus*, Qualitative Phytochemicals Analysis.

Introduction

Historically, Plants have provided a source of inspiration for novel drug compounds, as plant derived medicines have made large contribution to human health and well being (Benali et.al 2012). According to World Health Organization (WHO) in 2008 more than 80 % of the world population relies on traditional medicines for their primary health care needs (Pierangeli et.al 2009). Traditional & folklore medicine plays an important role in health services around the globe. About three quarter of the world populations depends on plants & its extract for health care (Mishra et.al 2007).

Butea monosperma is commonly known as Flame of forest, belonging to the family Fabaceae. The bark is useful in indigenous medicine for the treatment of dyspepsia, diarrhoea, dysentery, ulcer, sore throat and snake bite (Firadaus et.al 2012). *Eucalyptus globulus* belongs to the family Myrtaceae. It is used in many parts of world for the treatment of a wide variety of diseases including microbial infections (Hardel et.al 2011).

The present study was undertaken to identify the phytochemicals present in the bark of *Butea monosperma* and *Eucalyptus globulus* using n-hexane, Ethyl Acetate and Water extract.

Experimental

Material and Methods

The bark of *Butea monosperma* and *Eucalyptus globulus* were collected from samangad area of Gadhinglaj region of Maharashtra, India. The bark was washed with purified water and completely shade dried. Authentication was done at Department of Botany, Dr. Ghali College, Gadhinglaj.

Crude Extraction

150 gm of dried bark of each of *Butea monosperma* and *Eucalyptus globulus* was mixed with 500 ml of n- hexane and ethyl acetate separately. After filtration, the filtrate was dried and used for phytochemical test. For water extract 150 gm of leaves were mixed with 1500 ml of distilled water and heat on water bath for 1/3 rd of original concentration . Then it was used for further analysis.

Identification Test

All extract of medicinal plants were analyzed for the qualitative phytochemicals analysis as shown in table 1 using standard methods (Seema et.al 2011, S.De. et.al 2010, Sunil et.al 2012, Ashokan et.al 2012, Harborne 1973 & Sofowora 1993).

Result and Discussion

For various extracts chemical test were performed and the results were presented in Table 1. Reena et.al reported Alkaloids, Steroids, Tannin, Flavonoid, Saponin, Phenolics and Glycosides from the leaves extract of *E. globulus* by using Methanol, Dichloromethane, Hexane and Chloroform extract. Scholastica Obiorah determined sixteen phytochemicals qualitatively from leaves of *E. globulus*. Carbohydrate, Proteins, Steroids, Cardiac Glycosides, Tannin & Phenolics were recorded by Gomase et.al from the hydroalcoholic extract of bark of *E. globulus*.

Muralidhar reported Steroids, Alkaloids, Flavonoids, Phenolic compound & Tannin from various extract of stem bark of *Butea monosperma*. Patil et.al determined Sterols and Triterpenes, Glycosides, Flavonoids, Proteins, Alkaloids & Tannin from Chloroform and Methanolic extract of leaves of *Butea monosperma*.

In the chemical test results Aqueous extracts contains high number of phytochemicals qualitatively whereas Ethyl acetate extract contains very low number of secondary metabolites.

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Table 1. Qualitative Phytochemical Analysis of bark of *Butea monosperma* and *Eucalyptus globulus*

Sr. No.	Particulars	B.W.E.	B.E.A.	B.H.E.	E.W.E.	E.E.A.	E.H.E.
1	Carbohydrate						
	Molisch's Test	-	-	-	+	+	+
	Barfoed's Test	-	-	-	-	+	+
	Iodine Test	-	-	-	-	-	-
	Benedicts Test	-	-	-	-	-	+
2	Proteins	-	-	-	-	-	-
	Xanthoproteic						
3	Amino Acids						
	Ninhydrin Test	+	-	-	+	-	-
4	Flavonoids						
	NaOH Test	-	-	-	-	+	-
5	Alkaloids						
	Wagner's Test	+	-	+	+	+	+
6	Saponin						
	Foam Test	+	-	-	+	+	+
7	Lignin's						
	Furfuraldehyde Test	+	+	-	+	+	-

8	Vitamin C.						
	DNPH Test	+	+	+	-	+	-
10	Tannin						
	FeCl ₃ Test	-	-	-	-	+	+
11	Fatty Acids	+	-	-	+	+	-
13	Phenolics	-			+		
14	Resin						
	HCl Test	-	-	-	-	-	-
15	Phenol						
	Fallagic Acid Test	-	+	-	+	-	+
16	Cardenolites	-	+	-	-	-	+
17	Triterpenoid						
	Tschugajeu	-	+	-	-	+	-
18	Flavones	-	-	-	+	-	-
19	Quinones	-	-	-	-	-	-
20	Flavanones	-	-	-	-	+	-
21	Anthocyanin						
	10% NaOH Test	-	-	-	-	+	-
22	Anthraquinone	-	-	-	+	-	-
23	Steroids						
	Chloroform Test	+	-	-	+	+	+
24	Betacyanin	-	-	-	-	-	-
25	Coumarins	+	-	-	-	-	-
26	Acid	-	-	-	-	-	-
27	Phlobatannin	-	-	-	-	-	-
28	Leucoanthocyanin	-	-	-	+	+	-
29	Chalcones	-	-	-	+	-	-
30	Cardiac Glycosides	-	-	-	-	-	+

+ = Present; - = Absent; B.W.E. = *Butea monosperma* Water Extract;

B.E.A. = *Butea monosperma* Ethyl Acetate Extract;

B.H.E. = *Butea monosperma* n-Hexane Extract;

E.W.E. = *Eucalyptus globulus* Water Extract;

E.E.A. = *Eucalyptus globulus* Ethyl Acetate Extract;

E.H.E. = *Eucalyptus globulus* n-Hexane Extract