International Journal of PharmTech Research
CODEN (USA): IJPRIF ISSN : 0974-4304
Vol.2, No.4, pp 2438-2440, Oct-Dec 2010

Comparison of TLC fingerprint profile of different extracts of *Embelia ribes*

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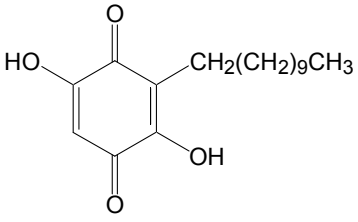
Abstract: The methanol and chloroform extracts of *Boerhaavia diffusa* were prepared and investigated for TLC. It was concluded that the chloroform extract showed the better results for TLC in solvent system toluene : acetone : acetic acid. The major spots and their R_F values were calculated.
Keywords: TLC, methanol, chloroform, *E. ribes.*

Introduction

The drug consists of dried mature fruits of *Embelia ribes* Burm. of family Myrsinaceae, commonly known as *Vidanga* in Sanskrit. It is a large scandent shrub with long slender, flexible branches, distributed throughout hilly parts of India upto an altitude of 1600 m.[1]The fruit contains embelic acid, tannins, christembine and embelin **(1)** as major constituents. Vilangin, 2,5-isobutylamine salts, quercetol and volatile oil are also present. [2-4]



(1) Embelin

The fruits are used as carminative, appetizer, alterative, anthelmintic, stomachic, diuretic and contraceptive.[5,6] The aqueous extract of the berries was found to have antifertility activity. It checked implantation in rats that were fed with the extract in a dose of 100 mg /kg.[7] The alcoholic extract of fruits showed mild anthelmintic and antibacterial activity against Gram-positive and Gram-negative organisms.[8] Embelin has shown significant antitumour activity in methylcholanthrene-induced fibrosarcoma in albino rats.[9]

Materials and methods

Plant material

The plant drug was collected from Medicinal Plants Garden U.I.P.S. Chandigarh and identified by Mr Chanchal. A voucher specimen was deposited in the herbarium of U.I.P.S (Panjab University) Chandigarh. Analytical grade solvents and reagents were used for TLC purpose. All the reagents used were of GR grade. Silica gel G plates (E. Merck, alumina base, 0.2 mm thickness) were used.

Preparation of extract

The 5 g sample of powdered drug was extracted in 50 ml of methanol and chloroform extracts for 1 hour on a water-bath. The extract was filtered and evaporated to dryness under reduced pressure. The residue was dissolved in respective solvent (methanol and chloroform) and filtered. The volume was adjusted to 5 ml and used for TLC.

Sample application

A volume of 10 µl of extract was applied in the form of a band on the silica gel 60 F_{254} TLC plate of 0.2 mm thickness.

Development of plate

The plate was developed in a solvent system toluene : acetone : acetic acid (9 : 1 : 0.5) and spray with anisaldehyde-sulphuric acid reagent.

Results and Discussion

The methanol and chloroform extracts of fruits of *E. ribes* were prepared. A large number of solvent systems were tried to achieve a good resolution. Finally, the solvent system toluene : acetone : acetic acid (9 : 1 : 0.5) (Fig 1) was selected for methanol extract. The band at R_f 0.13 was observed only under 254 nm. The band at R_f 0.27 appeared orange under 366 nm and violet under 366 nm after spray with anisaldehyde-sulphuric acid reagent. A light-green band at R_f 0.32 was seen only under 366 nm. An orange band was observed at R_f 0.60 under 366 nm and violet under visible light after derivatization.

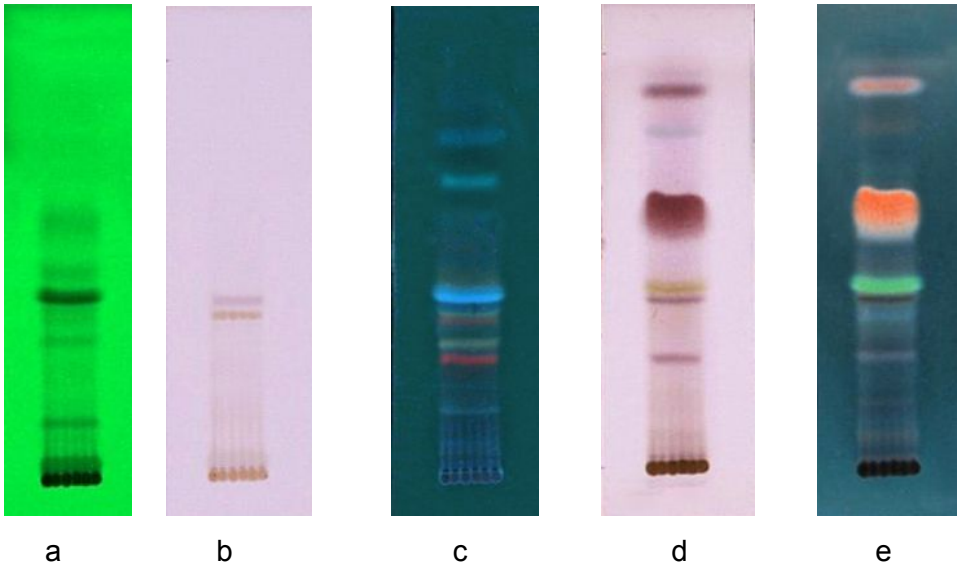


Fig 1. TLC fingerprint profile of fruits of *E. ribes* under 254 nm (a), under visible light before spray (b), under 366 nm after spray with anisaldehyde-sulphuric acid reagent(c), under visible light after spray (d) and under 366 nm after spray.

Table: Major spots in the TLC of the methanol extract of *E. ribes*

S.No	Rf value	Colour of band				
		Before spray under 254 nm UV light	Before spray under 366nm UV light	Before spray under visible light	After spray under 366nm UV light	After spray under visible light
1	0.13	Black	--	--	--	--
2	0.27	--	Orange	--	--	Violet
3	0.32	--	Light green	--	--	--
4	0.60	--	--	--	Orange	Violet

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