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TLC analysis of Liquidambar Orientalis: A novel approach

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ABSTRACT

Liqidambar orientalis have a long standing therapeutic record in Unani System of Medicine.it is commonly known as *Shilakali* or Turkish sweet gum. it is obtained from the bark of plant which is known as *Mia saila*.it has a wide range of pharmacological effects like Emmenagogue, Aphrodisiac, Diuretic, Antibacterial and general tonic. Various scientific researches revealed that *Liqidambar orientalis* has Nematicidal activity, Cytotoxic and genotoxic activity. Methods: TLC of different extracts of *Liquidambar orientalis* was performed for the separation of different components and the Rf values of detected components was noted down accordingly. Results: TLC of different extracts shows various R_f values which suggests the presence of different kinds of phytochemicals which is having a therapeutic significance. Conclusion: TLC analysis along with the other analytical techniques will guarantee the purity, safety, potency and efficacy of herbal drugs.

Keywords*; Liquidambar orientalis; TLC; R_f value; Scientific evaluation*

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INTRODUCTION

Liquidambar orientalis is an important drug in Unani system of medicine which is obtained from injured bark. it is native to Meditarrian region, mainly occurs in turkey and on the Greek island of Rhodes.[1] It is commonly used for various medicinal purposes like antiseptic,expectorant,aphoriadic,Emmenagogue,deodorant,emmoliant,stimulant,etc.[2,3] According to Ibn Sena the Temperament of Mai Saila is Haar 1^0 yabis 2^0. *Liquidambar orientalis* or oriental sweet gum is an attractive deciduous tree, 30-35m in height. Flowers are unisexual and bloom from March to April. Orientalis sweet is important both as a relic and endemic species. It is economically important due to its natural balsam producing ability.[4]

MATERIALS AND METHOD

Selection of drug:

The drug was purchased from the Local Market and was properly identified and authenticated.

Thin Layer Chromatography analysis [5, 6, 7]

For TLC analysis the different solvent systems were used with different ratios. Different extracts like Chloroform: Methanol (4:1) and Touline: Ethyl acetate (1:1) has been used for separation of various components and the R_f values of different spots appeared in different solvent system has been noted down.

Results

Thin layer chromatography is one of the most important parameter used for detecting the adulteration in order to judge the quality of drug. The resolution of different kinds of chemical components are separated by using TLC and calculating the R_f values after detecting the spot in order to standardize the drug for its identity, purity and quality. if the drug is adulterated ,there might be appearance of other components present in the adulterants intern the number of spots may increase and on the other hand the deteriorated drugs may loose the components and the number of spots appeared might be less. The results of TLC with R_f values of different spots are depicted in Table 1.

Table 1: Results of TLC with R_f values

Extract of drug	Solvent system	Spray/Treatment	No. of spots	R_f Values
Methanol	Chloroform: Methanol(4:1)	10% vanline and H_2SO4	05	0.62,0.71,0.78, 0.86,0.90
Chloroform	Touline: Ethyl acetate (1:1)	10% vanline and H_2SO4	03	0.56,0.68,0.88

CONCLUSION

Chromatography is an important technique commonly used for isolation and identification of various components present in the drug. TLC is a simple, cost effective and easy to operate technique in photochemistry and biochemistry with numerous applications. R_f Value is the best tool for standardization of a drug. A Unani drug or other herbal preparations can be used as therapeutic agent only if they are genuine and their standard and quality are up to mark. The current study was done with an aim that along with other parameters the elaborated TLC analysis may be used to create a digital database for plant identification in future.

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