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## IDENTIFICATION OF LUPEOL IN ETHANOLIC EXTRACT OF *CELASTRUS PANICULATUS* BY HPTLC METHOD

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### Keywords:

*Celastrus paniculatus*,  
Seed, Seed oil, Ethanolic extract,  
HPTLC, Lupeol

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**ABSTRACT:** *Celastrus paniculatus* is a known herb used in alternative system of medicines since ancient times. Traditionally seed oil of *Celastrus paniculatus* has been in various medicinal remedies to cure neuronal disorders, asthma, cough, etc. The constituents found in *Celastrus paniculatus* reportedly are sesquiterpenoids, triglycerides, triterpenoids. A high-performance thin layer chromatography, which is considered as a sensitive method for accurate quantification method for analysis of compounds. The instrument CAMAG Linomat 5 lamp was used, and the wavelength was 254 nm.

**INTRODUCTION:** *Celastrus paniculatus* commonly known as Jyotishmati, Intellect-tree, Climbing staff tree, Malkangani, Black oil tree. It is an important medicinal plant used in traditionally in Ayurvedic system of medicines it grows throughout India height of almost 1800-2000 meters. It is a deciduous tree which grows very large. This plant belongs to the class Angiospermae, order Celastrales and family Celastraceae. In the ancient time mostly seed oil of *Celastrus paniculatus* have been used for many remedies, but other parts of the plant are also very useful. Various part of the plant is used to treat malaria, oil is used as stomachic, in treatment of headache, leucoderma.

The reported chemical constituents of *Celastrus paniculatus* are Malkangunin, celapanin celapanigin, celapagin, pristemerin, zeylasterone and zeylasteral, fatty oil with palmitic, oleic, linoleic and linolenic acids. A triterpene compound Lupeol was isolated from pet ether extract of the leaves which have wound healing activity <sup>1-6</sup>. However, till now, all the chief chemical constituents have been reported in the seed, and its oil and other compounds have been reported in pet ether extract, methanolic and aqueous extract in another part of the plant. So in this paper, we are the discussing the presence of lupeol in the ethanolic leaves extract of the plant by HPTLC method <sup>7-9</sup>.

**MATERIALS AND METHODS:** The fresh leaves of the plant were collected from district Vidisha in the month of July-August and authentication of the plant was done by the MFP PARC (Vindhya Herbals). Analytical grade solvents were used for the process. Lupeol standard was procured from Sigma Aldrich. The whole

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HPTLC estimation was performed in the Centre of Excellence in Biotechnology (MPCST, Bhopal)

**Preparation of Extract:** The leaves were shade dried and ground in the mixer. The coarse powder of leaves was further macerated for extractive values, and then 95 percent ethanol was selected for preparation of the extract.

#### High-Performance Thin-Layer Chromatography:

**Instrument:** The instrument CAMAG Linomat 5 lamp was used, and the wavelength was 254 nm and CAMAG TLC Scanner. The chromatographic separation was performed. The HPTLC method was performed by using silica gel 60 F 254 plates (E. Merck KgaA 20.0 cm × 10.0 cm) were used as a stationary phase to confirm and solvent system Toluene: Chloroform: Methanol (4:47:1.3)(v/v/v) were used. The  $R_f$  value was 0.94 and software win CATS Planar used. Other specifications are:

Number of Tracks	9
Position of first track X	15.0 mm
Scan start pos. Y	5.0 mm
Distance between tracks	21.2 mm

Scan start pos. Y	5.0 mm
Slit dimensions	6.00×0.40 mm, Macro
Optimize optical system	Light
Scanning speed	20 mm/s
Data reduction	100 $\mu$ m/step

#### Measurable Table

Wavelength	254
Lamp	D2 & W
Measurement Type	5.0 mm
Measurement Mode	Remission
Optical filter	Second order
Detector mode	Automatic
PM high voltage	295 V

**RESULTS AND DISCUSSION:** By analyzing the sample and standard, it was found that the standard Lupeol has  $R_f$  value 0.94. Regression via height: Single level  $Y = 0+0* X$   $r = 0.00000$  Std dev = -1 was observed. The spectrum that is obtained is that of the test sample shown in **Fig. 2** is super-imposable with standard Lupeol shown in **Fig. 3**, and this indicate the purity of the peak.

TABLE 1: TEST SAMPLE PEAK

Peak	Start $R_f$	Start Height	Max $R_f$	Max Height	Max %	End $R_f$	End height	Area	Area %	Assigned Substance
1	0.93	0.6	0.94	47.0	100.00	0.97	0.3	505.5	100.00	Substance 1

TABLE 2: STANDARD PEAK

Peak	Start $R_f$	Start Height	Max $R_f$	Max Height	Max %	End $R_f$	End height	Area	Area %	Assigned Substance
1	0.92	2.7	0.94	46.9	100.00	0.97	1.0	531.6	100.00	Substance 1

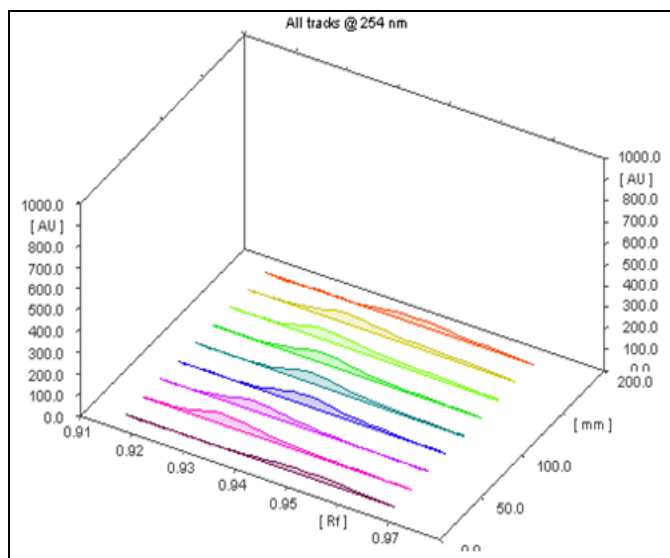


FIG. 1: GRAPH OF ALL TRACKS

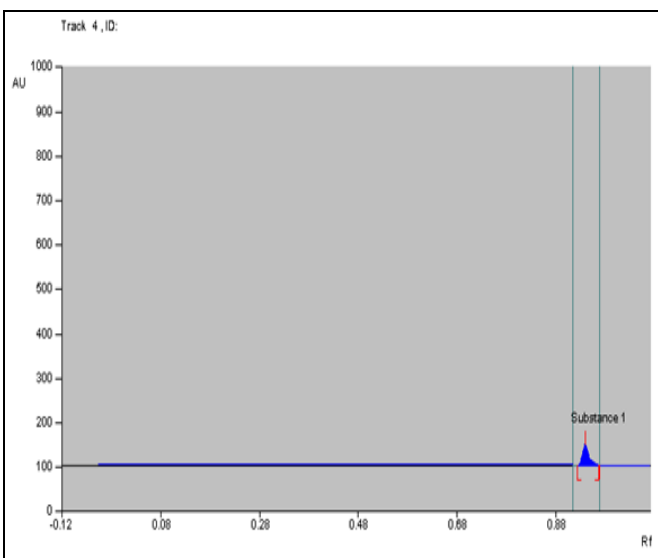


FIG. 2: CHROMATOGRAM OF THE TEST SAMPLE

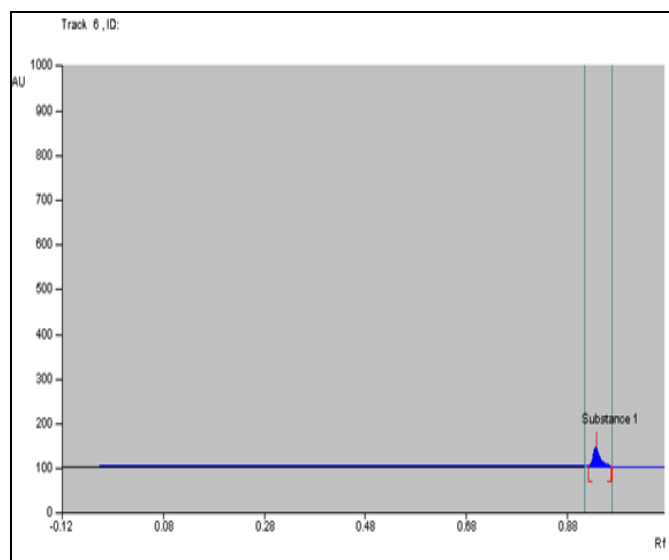


FIG. 3: CHROMATOGRAM OF THE STANDARD

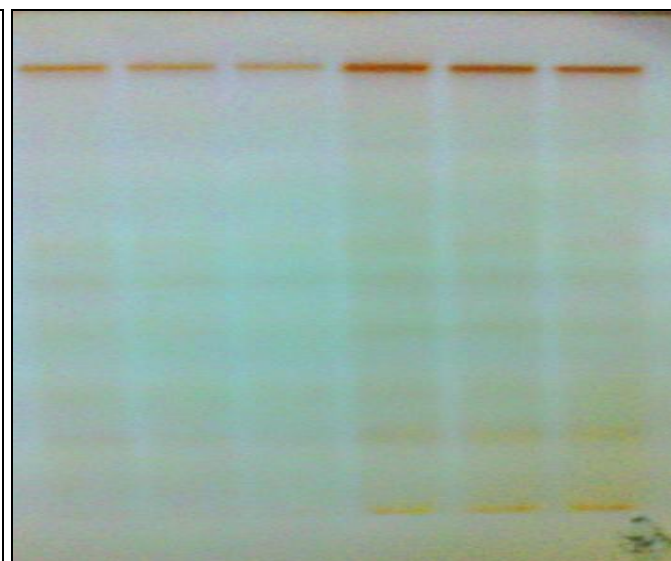


FIG. 4: PICTURE OF PLATE

**CONCLUSION:** By analyzing the whole HPTLC profile the conclusions that have been made that the apart from seed and seed oil other parts of the plant also contains many constituents and especially ethanolic extract of the plant contains Lupeol, and by this result, there is high possibilities this may contain other important constituents.

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**CONFLICT OF INTEREST:** Nil

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