

Research Article

PHYTOCHEMICAL STUDIES OF WHOLE PLANT OF *CYATHOCLINE LYRATA* –CASS

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ABSTRACT

Phytochemical studies (screening) of whole plant of *Cyathocline lyrata* has been carried out along with ash value, extractive value, TLC, & High performance liquid chromatography.

KEY WORDS *Cyathocline lyrata*, TLC, HPLC

INTRODUCTION :-

Cyathocline lyrata is annual herb, growing to 20-25 cm high, branched grooved stem has soft hair covering it. Whole Plant is strongly aromatic. Alternatively arrange stalkless leave are toothed covered with soft hair and flowers occurs in corymbs at the end of branched in purple color.

Cyathocline lyrata widely spread in Himalyas range, Asam, India (Local area of M.P.). *Cyathocline lyrata* is well known drug in Indigeneous system of medicine for its various used as a bitter tonic. It acts as germicide and appetizer. The essential oil of aerial part of *Cyathocline lyrata* had show fairly pharmacological activity. It also shows anathematic, insect repellent and anti-microbial activity.

The essential oil of *Cyathocline lyrata* has been fourteen constituent all of which constituent like-p-cymene. Camphor, citral, limonene, cresol, new ketophenol etc. Were identify by co-TLC

MATERIAL AND METHOD**Plant Material**

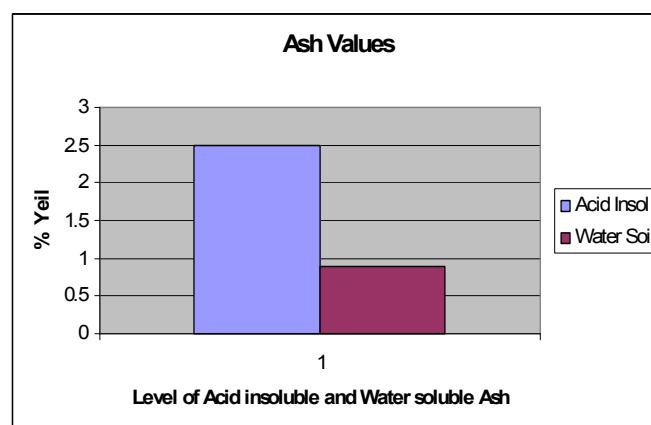
The fresh part of *Cyathocline lyrata* were dried at room-temp (25-30°C) for 7-10 days.

Whole plant of *Cyathocline lyrata* was collected from local area of Madhya Pradesh (Campus of Vikram University, Ujjain) and authenticated by Dr. A.K. Pathak.

Phytochemical screening studies were performed by following the standard methods. (Total ash, Acid Insoluble ash, Water Soluble ash. Water and alcohol Soluble extractive values and continuous soxhlation has been performed for *Cyathocline lyrata* with increasing polarity TLC, HPLC .

RESULT AND DISCUSSION**Ash Value of *Cyathocline lyrata*****Table 1: Ash Value of *Cyathocline lyrata***

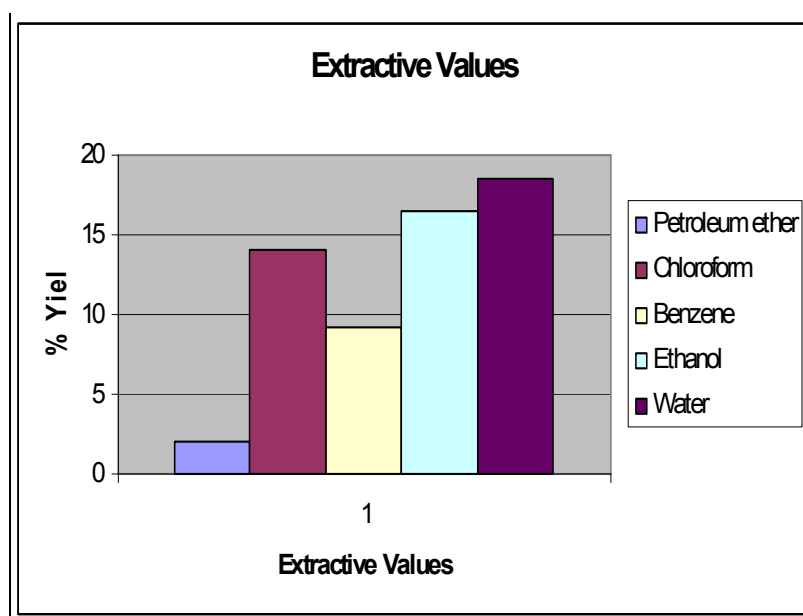
Moisture Content (in %)	Ash Value Percentage		
	Total Ash (W/w)	Acid insoluble Ash (W/w)	Water Soluble Ash (W/w)
7.8	4.4	2.5	0.9

**Extractive values of whole plant of *Cyathocline lyrata* Cass.**

Extractive values give knowledge about solubility. Different extractive values are described below in the table:

Table 2: Extractive values of whole plant of *Cyathocline lyrata* Cass

Solvent	Percent Yield
Petroleum Ether	2
Chloroform	14
Benzene	9.2
Ethanol	16.5
Water	18.5

**Qualitative Analysis of the Extracts****Table 3: Chemical test for different solvent extract of *Cyathocline***

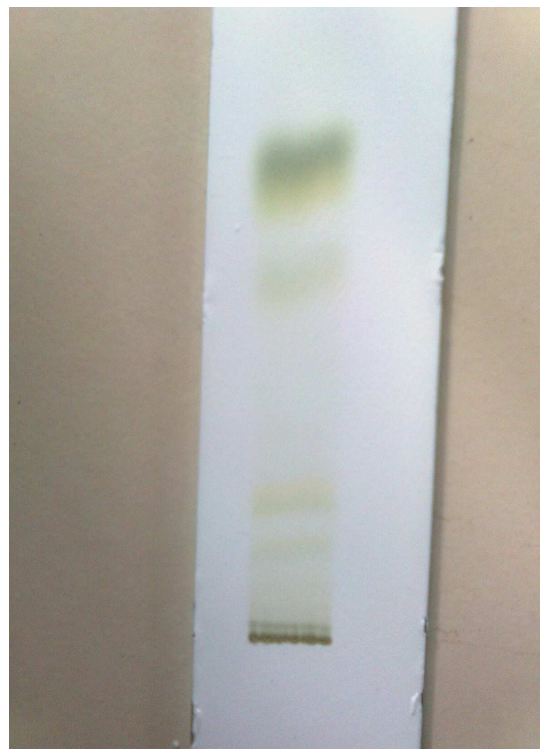
No.	Test	PET Ether	Ethanol	Benzene	Chloroform	Water
1.	Carbohydrate					
	a) Fehling test	-	-	-	-	-
	b) Benedict test					
2.	Protein					
	a) Xanthoprotein test	-	+	+	-	-
3.	Alkaloid					
	a) Dragon droff test	+	-	+	+	+
	b) Mayer test	+	-	-	+	+
4.	Tanin (5% FeCl₃)	-	+	-	-	-
5.	Amino Acid					
	a) Ninhydrin test	-	-	-	-	-
6.	Steroid					
	a) Salkowski reaction	+	-	+	+	+
7.	Glycoside					
	Keller Killani test	+	+	+	+	+

Thin layer Chromatography

Thin layer Chromatography of successive solvent extract of whole plant of *Cyathocline lyrata*. Thin layer chromatography was an important tool in the separation, identifications and estimation of different components. Here, when we spot a mixture of components in a TLC plate, the compounds, which were readily soluble, but not strongly adsorbed moves up along with the solvent and those not so soluble but more strongly adsorbed moves up less readily to separations of compound. TLC was performed on the precoated TLC aluminium sheets material silica gel F-254 (E.Merck). The TLC chamber were saturated with the solvent and after applying the spot on TLC plates were kept for development of chromatogram. Then the separations were visualized by the detecting reagent/methods and were studied.

Procedure:

Approximately 10 micro litre of sample solution was applied on a precoated silica gel 60 F254 aluminum plates of uniform thickness (0.2mm). The plate was developed in the solvent upto a distance of 10 cm.



Thin layer chromatography of Cyathocline Lyrata

Visualization:

The plate was observed under UV at 254 and 366 nm and then exposed to iodine vapors. The plate was also sprayed vanillin-sulphuric acid reagent and heating plate for 10 min at 110°C.

Solvent Systems :-

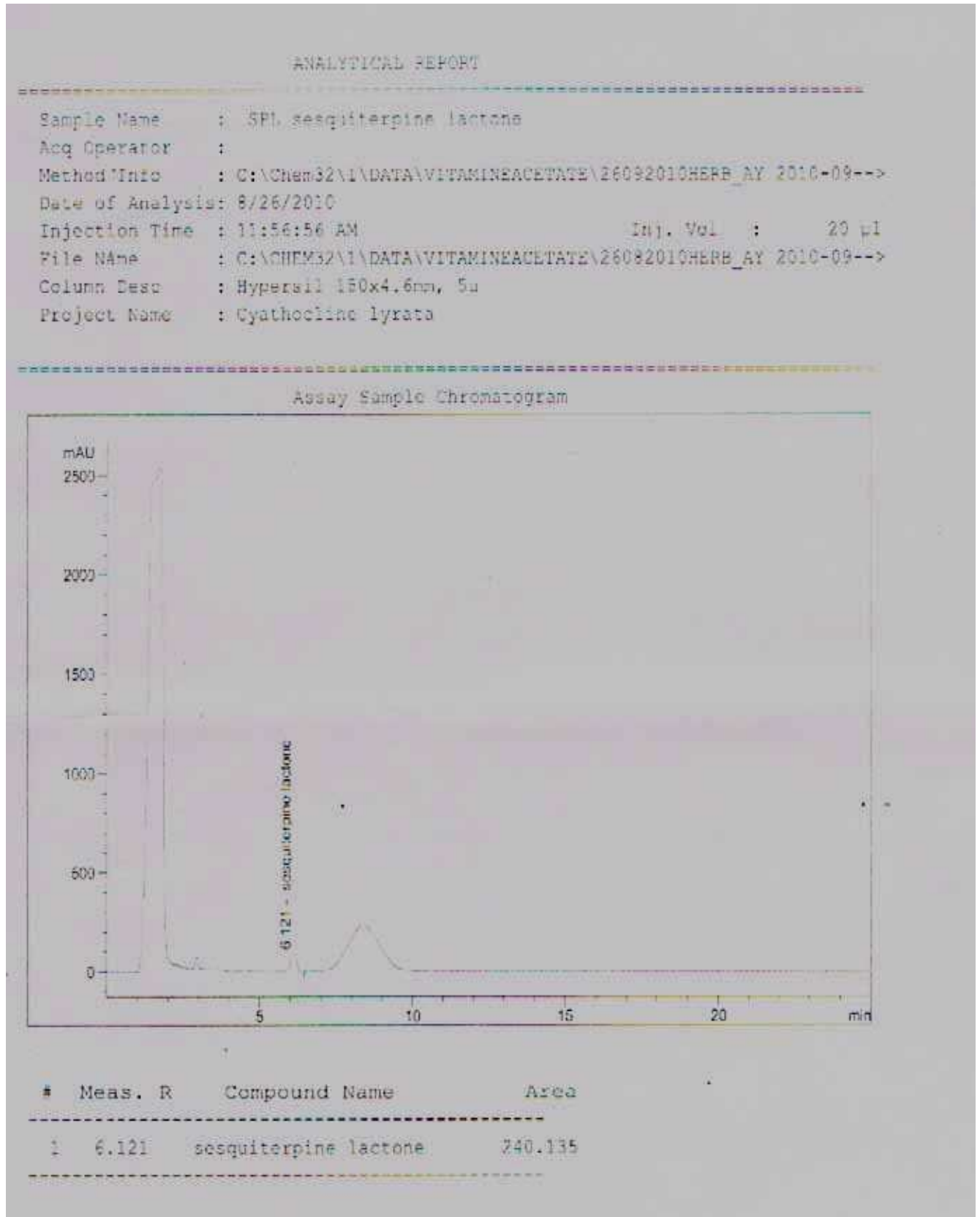
Table 4: Detail of solvent system for Thin Layer Chromatography

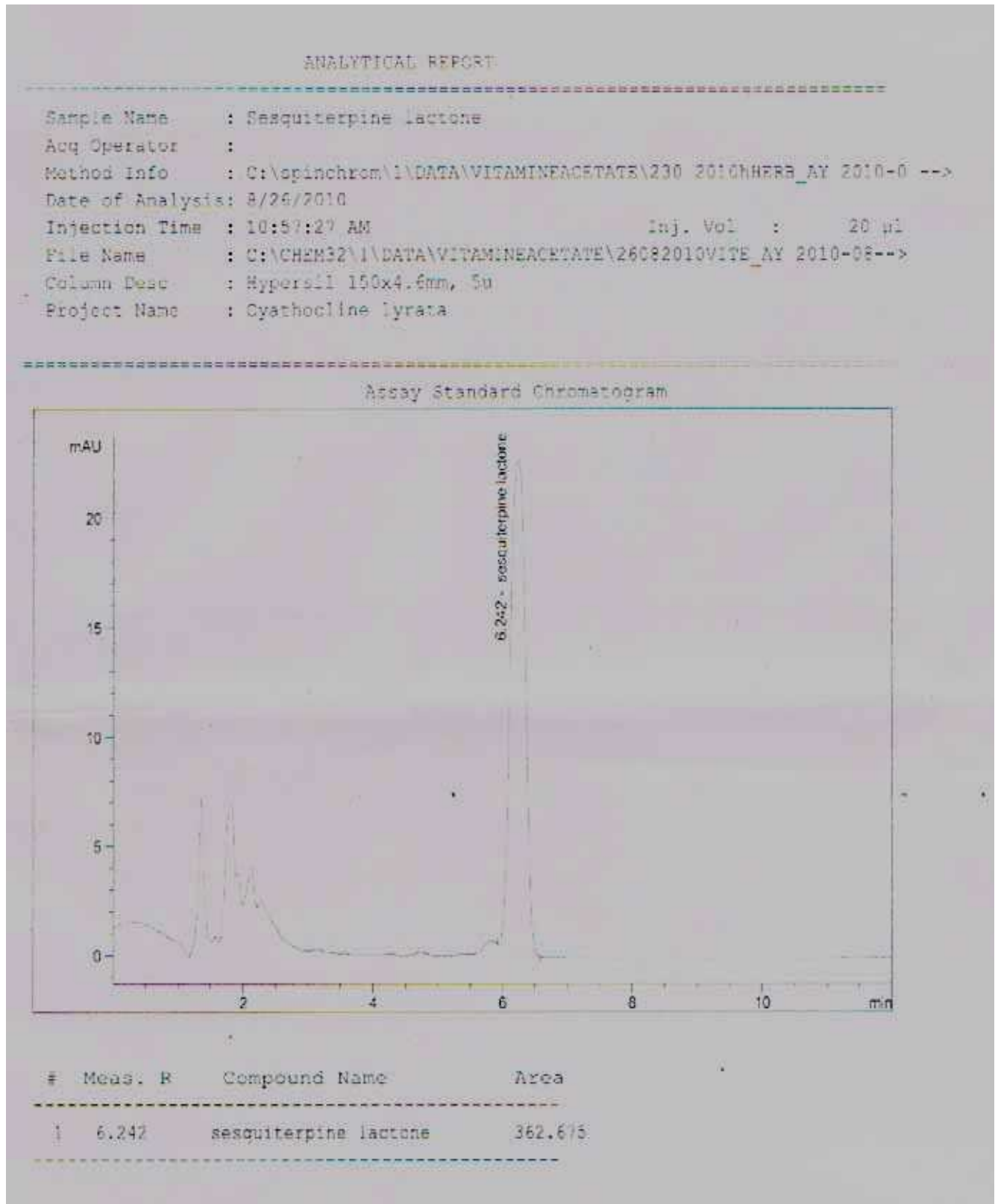
Extracts	Solvent System	Spray reagent/treatment	No. of Spots	Rf. Values
Petroleum Ether (60-80°C)	Hexane, Ethyl Acetate 90 : 0	Exposed to I ₂ vapour	4	0.15, 0.17, 0.21, 0.23
Benzene	Toluene, Ethyl Acetate, formic Acid	Exposed to I ₂ vapour	2	0.19, 0.22
Chloroform	Benzene, Ethyl Acetate 90 : 10	Exposed to I ₂ vapour	6	0.23, 0.139, 0.17, 0.203, 0.47, 0.56
Ethanol	Butanol, Acetic acid; Water	Exposed to I ₂ vapour	2	0.41, 0.67
Water	Butanol, Acetic acid; Water	Exposed to I ₂ vapour	2	0.21, 0.63

CONCLUSION

The extracts elutes obtained after the column chromatography and HPLC shows the

isolation of a sesquiterpene lactone from the chloroform extract of *Cyathocline lyrata*



HPLC Chromatogram of Elute of extract of *C.lyrata***HPLC Chromatogram of Standard of *C.lyrata*****REFERENCES**

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