

## HPTLC Confirmation of Lumina Herbal Shampoo

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### Abstract

*The present study discusses about the HPTLC confirmation of the herbs used in the Siddha drug Lumina herbal shampoo. The study findings clearly confirm that all the herbs are well preserved in the shampoo base without any disintegration or denaturation. Assuming the therapeutic value of all the herbs used, the well preserved status of these herbs in Lumina Shampoo base validates their drug efficacy. Findings are discussed in the paper.*

**Keywords:** Herbal shampoo, HPTLC, Siddha, fingerprint

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### INTRODUCTION

From time immemorial, various herbal preparations are being used for in India as medicaments for different diseases/problems such as enhancing hair growth, treating dandruff, alleviating pain, skin dryness etc. [1–5]. The traditional Indian system of medicine has rich mention of various herbs that are used for treating wide variety of diseases including Psoriasis and Vitiligo [5–8]. Most of the herbal drugs are prepared either with single herb or with multiple herbs.

When such medicinal plants are used in the Siddha drug preparations with the assumption that these herbs would impart therapeutic benefits the presence of the herbs in the final formulation needs to be ascertained in order to validate the above assumption. The fingerprints of the individual herbs should be detectable in the finished product. The previous research work has established the efficacy of Lumina herbal shampoo at laboratory level [9].

In the present paper, we report the confirmation and fingerprint matching of different herbs in the proprietary Siddha medicine, Lumina herbal shampoo. The findings are discussed in the paper.

### MATERIALS AND METHODS

#### Description

Lumina herbal shampoo is a licensed proprietary Siddha Medicine of Dr. JRK's

Research and Pharmaceuticals Pvt. Ltd., Chennai.

#### Composition of Lumina Herbal Shampoo

Each 5 ml contains extracts of:	%
<i>Acacia sinuate</i>	: 10 mg 0.2
<i>Aloe Vera</i>	: 2 mg 0.04
<i>Trigonella foenum</i>	: 2 mg 0.04
<i>Hibiscus rosa sinensis</i>	: 5 mg 0.1
<i>Indigofera tinctoria</i>	: 5 mg 0.1
<i>Psoralea corylifolia</i>	: 2 mg 0.04
Base	: QS

#### Collection of the Plant Materials

All the above six herbs were procured from the approved medicinal plant supplier. In brief, the leaf/flower/seed, whichever is applicable of the above plants, were procured and their quality was then ascertained. The above plant materials were then shade dried to reduce the moisture content to 5%, wherever applicable.

#### Extraction Process

All the above herbal materials after quality assurance were treated separately with isopropyl alcohol at 1:5 ratios and were incubated for 2 days with regular stirring. After extraction, the mixture was filtered and filtrate was dried to evaporate the solvent and final extract was used in the formulation at the level specified.

#### Preparation of Lumina Herbal Shampoo

Shampoo base was prepared using ingredients that are approved by Indian Pharmacopoeia.

To the above shampoo base, all the herbal ingredients were incorporated as per the license.

### HPTLC Analysis of 10% Extracts of Individual Herbs

The above six IPA extracts were treated separately with methanol at 1:1 ratio. 5 µl of the methanolic fraction of the oil extract of each herb was loaded separately on HPTLC plate, silica gel 60 F 254 of E. MERCK KGaA and was allowed to run using a mobile phase composed of chloroform: methanol at 8:2 ratio.

The plates were scanned through a TLC scanner (CAMAG TLC Scanner 3 "Scanner3\_150607" S/N 150607 (1.14.28) at 254 nm and the profile was subjected to derivatization using p-anisaldehyde sulphuric acid stain and the derivatized TLC plate was scanned at 366 nm. The profile of each herbal extract was recorded.

### HPTLC Analysis of Lumina Herbal Shampoo

Since there is no proven method for the separation of herbal extracts from shampoo base available, we have adopted an alternative method to study the HPTLC profile of Lumina herbal shampoo. Instead of shampoo base, we have used methanol as base. To the 100 ml of methanol, the herbal extracts were added at the following percentage:

Ingredients	:	%
<i>Acacia sinuate</i>	:	0.2
<i>Aloe Vera</i>	:	0.04
<i>Trigonella foenum</i>	:	0.04
<i>Hibiscus rosa sinensis</i>	:	0.1
<i>Indigofera tinctoria</i>	:	0.1
<i>Psoralea corylifolia</i>	:	0.04

This mixture was subjected to HPTLC separation and subsequent derivatization. The TLC profile was scanned at 254 nm and was derivatized using p-anisaldehyde sulphuric acid stain and was scanned at 366 nm. The Rf values were tabulated.

## RESULTS

The HPTLC chromatogram has revealed the distinct signature fingerprints of all the six herbs present in the Lumina herbal shampoo such as *Acacia sinuate*, *Aloe vera*, *Trigonella foenum*, *Hibiscus rosa sinensis*, *Indigofera tinctoria*, *Psoralea corylifolia* (Table 1) when

scanned at 254 nm and after derivatization at 366 nm. The individual profiles of each herb could be seen in Lumina herbal shampoo as well.

**Table 1: HPTLC Profile of Various Herbal Extracts Lumina Herbal Shampoo Scanned at 254 nm.**

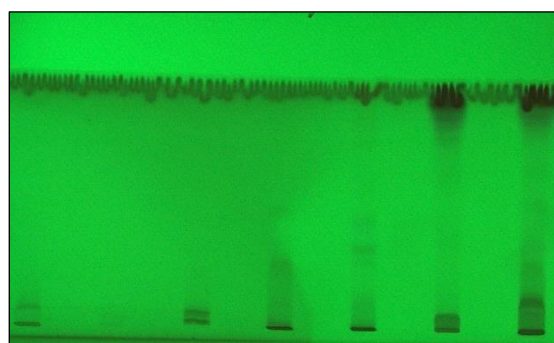
Details of the Herbs and Rf Value						
AS	AV	TF	HR	IT	PC	Lumina
0.1	0.09	0.07	0.01	0.16	0.04	0.02
0.58	0.2	0.19	0.13	0.2	0.22	0.13
0.74	0.32	0.31	0.32	0.29	0.45	0.20
0.81	0.74	0.55	0.4	0.41	0.57	0.34
0.84	-	0.71	0.45	0.56	0.69	0.47
-	-	-	0.55	0.71	-	0.70
-	-	-	0.71	-	-	0.83
-	-	-	-	-	-	0.88

The signature fingerprint of the individual herb could be distinctly identified in Lumina herbal shampoo through chromatogram (Table 2).

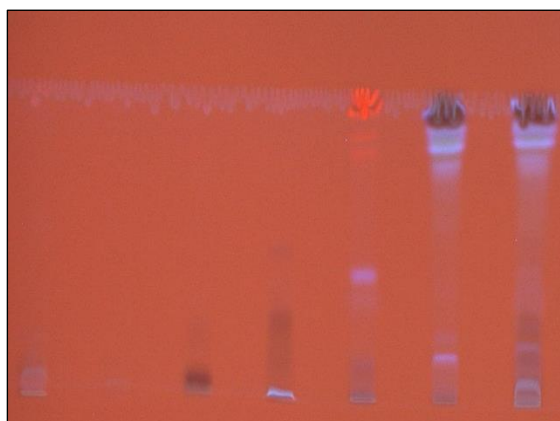
**Table 2: Derivatization of Various Herbal Extracts of Lumina Herbal Shampoo Scanned at 366 nm.**

Details of the Herbs and Rf Value						
AS	AV	TF	HR	IT	PC	Lumina
0.02	0.02	0.09	0.02	0.21	0.09	0.03
0.1	0.12	0.44	0.16	0.28	0.4	0.16
0.32	0.18	0.55	0.33	0.64	0.45	0.22
0.5	0.54	0.64	0.53	0.75	0.73	0.32
0.58	0.62	0.73	0.73	0.83	-	0.46
0.69	0.66	0.84	0.85	0.87	-	0.75
0.74	0.76	-	-	-	-	0.77
-	0.82	-	-	-	-	-
-	0.84	-	-	-	-	-

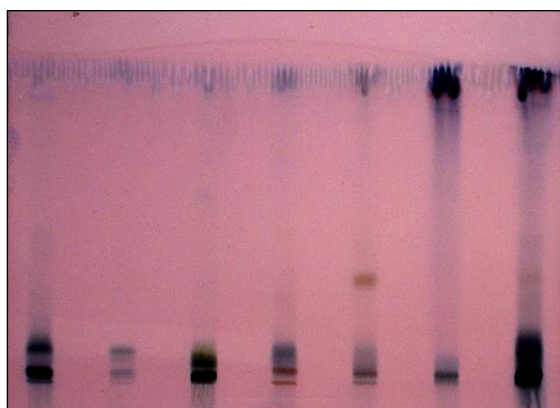
*Acacia sinuate* (AS), *Aloe Vera* (AV), *Trigonella foenum* (TF), *Hibiscus rosa sinensis* (HR), *Indigofera tinctoria* (IT), *Psoralea corylifolia* (PC).



**Fig. 1: HPTLC Finger Print of Herbs Used in Lumina Herbal Shampoo 254 nm.**



**Fig. 2:** HPTLC Finger Print of Herbs Used in Lumina Herbal Shampoo 366 nm.



**Fig. 3:** HPTLC Finger Print of Herbs Used in Lumina Herbal Shampoo.

**Lane 1 to 6 Clockwise:** *Acacia sinuate* (AS), *Aloe Vera* (AV), *Trigonella foenum* (TF), *Hibiscus rosa sinensis* (HR), *Indigofera tinctoria* (IT), *Psoralea corylifolia* (PC); **Lane 7:** Lumina Herbal Shampoo.

## DISCUSSION

Despite the use of herbs with proven efficacy at laboratory level, when traditional medicines are made with such proven herbs, the clinical efficacy remains doubted and questioned. The question on the adequate presence of individual herbs in the finished product is the mandatory prerequisite for the therapeutic benefits. Whether this fundamental tenet of drug making is followed in traditional systems of medicine, is unclear. The use of various herbs and by regressively following the traditional process may not need to a drug with a proven efficacy. To annul the above disconnect and to establish the credence between the product and its promise, we

have evaluated the HPTLC chromatogram of Lumina herbal shampoo, a proprietary *Siddha* drug.

Findings of the study have clearly shown that Lumina herbal shampoo is effective, purely because it has followed all the essentials of drug development. The herbs used in the formulation are equally effective at laboratory test as well as in the product because the presence and concentration of each herb could be established in the finished product.

The presence of unique fingerprint of each herb in Lumina herbal shampoo clearly suggests the least interaction between different herbs in Lumina herbal shampoo resulting in either their modification or degradation. This proves that each herb individually and collectively exhibits their best therapeutic effect thus making Lumina herbal shampoo the most effective anti-dandruff shampoo from *Siddha* system of medicine.

The broad spectrum anti-fungal activity, cell proliferation inhibition and hair growth promotion are some of the distinct benefits of different herbs in Lumina herbal shampoo. The distinct characteristics of all the herbs appeared to be well preserved in Lumina herbal shampoo, thus resulting in its superior therapeutics.

Nevertheless, the findings of the present study highlight the integration of an advanced science and scientific techniques by Dr. JRK's Research and Pharmaceuticals in developing *Siddha* drugs and revitalizing the *Siddha* system of medicine.

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