



Chromatogram based Evidence of Keshraksha Oil

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Abstract

The present study discusses about the HPTLC confirmation of the herbs used in the Siddha drug – Keshraksha oil. The study findings clearly confirm that all the herbs are well preserved in the coconut oil base without any disintegration or denaturation. Assuming the therapeutic value of all the herbs used the well preserved status of these herbs in oil base validate their drug efficacy. Findings are discussed in the paper.

Keywords: Hair oil; HPTLC; Siddha; Fingerprint; Keshraksha

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 ascertain 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 Keshraksha oil both at laboratory and pre-clinical level [9,10].

In the present paper we report the confirmation and fingerprint matching of different herbs in the proprietary Siddha medicine- Keshraksha oil. The findings are discussed in the paper.

Materials and Methods

Description: Keshraksha oil is a licensed proprietary Siddha medicine of Dr. JRK's Research and Pharmaceuticals Pvt Ltd Chennai.

Composition of Keshraksha oil

Each 5 ml contains extracts (Table 1).

Collection of the plant materials

All the above 5 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

The leaf/flower/seed materials (after crushing) were individually subjected to extraction using super critical fluid and the final extract

was adjusted to 10% in coconut oil. All the required process such as duration of treatment, continuous stirring etc., was followed to ensure complete extraction of the metabolites.

Preparation of Keshraksha oil

We have prepared the oil extracts of each herb at 10%.

In Keshraksha oil, 100% extract of each herb is used at 1% viz., *Phyllanthus emblica*, *Bergamia koenigiia* and *Lawsonia alba* and the *Indigofera tinctoria* and *Eclipta alba* at 1.5% respectively.

To formulate Keshraksha oil to achieve 1% and 1.5% of 100% oil extract of each herb, we have used 10% and 15% of the respective oil extracts and was made up to 100% with coconut oil.

HPTLC analysis of 10% extracts of individual herbs

The above 5 oil extracts were treated separately with methanol at 1:1 ratio. 5 microliter 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 Hexane: Ethyl acetate 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 Keshraksha oil

The Keshraksha oil was subjected to TLC separation after preparing the methanolic fraction as described above and was scanned at 254 nm. The profile was further 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 four herbs present in the Keshraksha oil such as *Phyllanthus emblica*, *Bergamia koenigii*, *Lawsonia alba*, *Indigofera*

Each 5 ml contains extracts of	%
<i>Phyllanthus emblica</i> : 50 mg	1
<i>Bergamia koenigii</i> : 50 mg	1
<i>Lawsonia alba</i> : 50 mg	1
<i>Indigofera tinctoria</i> : 75 mg	1.5
<i>Eclipta prostrata</i> : 75 mg	1.5
<i>Oleum cocus nucifera</i> : Q.S	

Table 1: Composition of Keshraksha oil.

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tinctoria, *Eclipta prostrata* (Table 2) when scanned at 254 nm and after derivatization at 366 nm. The individual profiles of each herb could be seen in Keshraksha oil as well.

Oleum cocos nucifera (CO), *Phyllanthus emblica* (PE), *Bergamia koenigii* (BK), *Lawsonia alba* (LA), *Indigofera tinctoria* (IT), *Eclipta prostrata* (EP)

The signature fingerprint of the individual herb could be distinctly identified in Keshraksha oil through chromatogram. Further the signature fingerprint of each herb was quite unique and different from coconut oil (Table 3). Clockwise Lane 1 to 6 *Oleum cocos nucifera* (CO), *Phyllanthus emblica* (PE), *Bergamia koenigii* (BK), *Lawsonia alba* (LA), *Indigofera tinctoria* (IT), *Eclipta prostrata* (EP); Lane- 7 – Keshraksha Oil (Figures 1-3).

Discussion

Despite the use of herbs with proven efficacy at laboratory level, when traditional medicine 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 Keshraksha oil a proprietary Siddha drug.

Findings of the study have clearly shown that Keshraksha oil is effective purely because it has followed all the essentials of drug

Details of the herbs and Rf Value						
CO	PE	BK	LA	IT	EP	Keshraksha oil
0.22	0.18	0.07	0.01	0.03	0.2	0.06
0.46	0.21	0.16	0.16	0.06	0.26	0.44
0.69	0.3	0.33	0.29	0.28	0.42	0.62
0.78	0.36	0.44	0.41	0.41	0.6	0.69
-	0.45	0.6	0.43	0.61	0.68	0.79
-	0.62	0.67	0.6	0.66	0.8	-
-	0.68	0.8	0.67	0.67	0.87	-
-	0.79	-	0.8	0.8	-	-
-	0.85	-	-	-	-	-

Table 2: HPTLC profile of various herbal extracts of Keshraksha Oil scanned at 254 nm.

Details of the herbs and Rf Value						
CO	PE	BK	LA	IT	EP	Keshraksha oil
0.21	0.04	0.08	0.08	0.01	0.09	0.08
0.46	0.17	0.16	0.19	0.13	0.18	0.2
0.55	0.2	0.18	0.26	0.19	0.28	0.27
0.58	0.27	0.25	0.27	0.28	0.44	0.32
0.63	0.31	0.27	0.44	0.44	0.5	0.45
0.65	0.44	0.32	0.55	0.55	0.55	0.56
0.71	0.55	0.45	0.56	0.57	0.57	0.57
0.79	0.57	0.54	0.81	0.62	0.69	0.7
0.84	0.68	0.55	0.98	0.69	0.72	0.8
0.92	0.78	0.79	-	0.82	0.81	0.82
0.97	0.83	-	-	-	-	-

Table 3: Derivatization of various herbal Extracts of Keshraksha oil scanned at 366 nm.

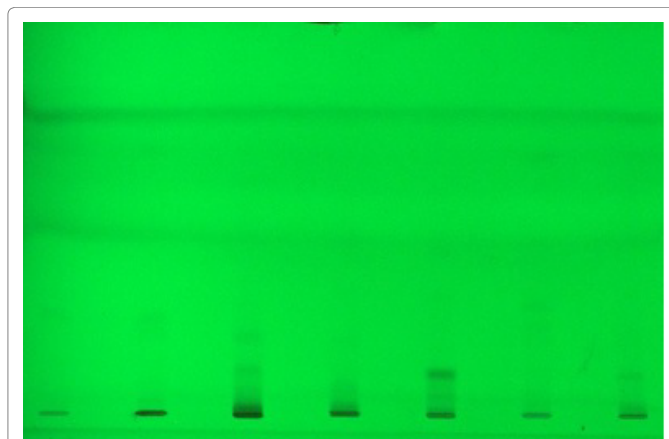


Figure 1: HPTLC finger print of herbs used in Keshraksha oil-254 nm.

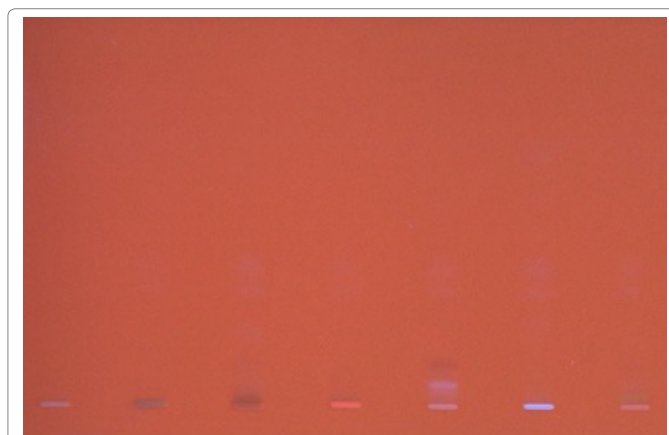


Figure 2: HPTLC finger print of herbs used in Keshraksha oil-366 nm.

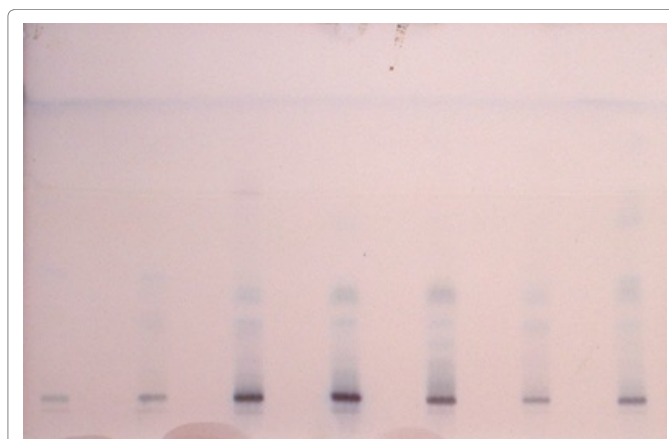


Figure 3: HPTLC finger print of herbs used in Keshraksha oil after derivatization.

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 Keshraksha oil clearly suggests the least interaction between different herbs in Keshraksha oil resulting in either their modification or degradation. This proves that each herb individually and collectively exhibits their best therapeutic effect thus making Keshraksha oil the most effective hair

growth oil from siddha system of medicine. The distinct characteristics of all the herbs appeared to be well preserved in Keshraksha oil, 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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