

## PHARMACOGNOSTICAL AND PHARMACEUTICAL ANALYSIS OF VIRECHANA YOGA IN THE MANAGEMENT OF *EKAKUSTHA* W.S.R PSORIASIS

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### ABSTRACT

Psoriasis is a chronic, auto immune disease that appears on the skin. In this scaly patches appear on skin. It is commonly co-related with *Ekakustha* in *Ayurveda*. *Ekakustha* is a type of *khsudra kustha*. In *kustha bahusansodhan* is required. Out of five *Shodhana* mentioned in *Ayurveda*, *Virechana* is also one of it *Virechana Yoga* is mentioned in *Ayurveda* classic *Charak samhita* in *Kustha Chikitsathan* for conducting *Virechana* procedure. In the present study a systematic approach has been evolved and effort has been made to develop well designed methodology for the standardization of his Formulation **Methods:** *Virechana yoga* was subjected to Pharmacognostical and physico-chemical analysis such as microscopic study, loss on drying, ash value etc. **Results:** The Pharmacognostical study showed the

presence of contents such as; Bordered pitted vessels of *Danti*, Oil globule of *Danti*, Rosset crystals of *Trivrit*, Resin content of *Trivrit*, Silica deposition of *Amalaki*, Stone cells of *Bhibhitaki*, Stone cells of *Haritaki*, Cork in surface view of *Trivrit*, *Tannin* content of *Trivrit* etc. The Pharmaceutical analysis showed that the loss on drying value 9.39%, pH Value 6.5, Acid insoluble Ash value 24.10% etc. HPTLC study of *Virechana Yoga* revealed 8 spots at 254 nm and 8 spots at 366 nm. **Conclusion:** The present work was carried out to standardize the finished product *Virechana yoga* in terms of its identity, quality and purity. Pharmacognostical and Physico-chemical observations revealed the specific characters of all active constituents used in the preparation.

**KEYWORDS:** *Virechana Yoga, Ekakushtha*, Pharmacognosy, HPTLC, Pharmaceutical.

## INTRODUCTION

Psoriasis is a chronic, autoimmune disease that appears on the skin. Psoriasis occurs when the immune system sends out faulty signals that speed up the growth cycle of skin cells. Psoriasis is not contagious. It commonly causes red, scaly patches to appear on the skin, although some patients have no dermatological symptoms. The scaly patches commonly caused by psoriasis, called psoriatic plaques, are areas of inflammation and excessive skin production. Skin rapidly accumulates at these sites which gives it a silvery-white appearance. Plaques frequently occur on the skin of the elbows and knees, but can affect any area including the scalp, palms of hands and soles of feet, and genitals. In contrast to eczema, psoriasis is more likely to be found on the outer side of the joint. On the basis of signs and symptoms, psoriasis can be correlated with *Eka-kushtha* described in *Ayurveda*.

*Eka-Kushtha* can be accepted as a psoriasis because of its distribution pattern and characteristic features like *Aswedanam*(anhydrous), the lesions are dry and rough. The lesions can occur all over the body or can be large patch that is *Mahavastu, Matsyashakalopama*<sup>[1]</sup> that is well defined, erythematous macule, papule and plague covered with silvery scales are coinciding with description of psoriasis than any other type of *Kushtha*.

The cause of psoriasis is not fully understood, but it is believed to have a genetic component.

Various environmental factors have been suggested as aggravating to psoriasis including stress, withdrawal of systemic corticosteroid, excessive alcohol consumption, and smoking but few have shown statistical significance. There are many treatments available, but because of its chronic recurrent nature psoriasis is a challenge to treat. So this overall situation demands the wholesome approach towards the pathology and a complete cure.

According to *Ayurveda* three types of *Chikitsa* are described by *Acharyas* among them *Shodhana* is first and the supreme; because of its capacity to eliminate the excessive *Doshas*. *Kushtha* in general and *Ekakushtha* particularly have excessive accumulation of *Doshas* and is *Chirakari* in nature. Hence *Shodhana* therapy seems to be the first line of treatment in *Ekakushtha*.<sup>[2]</sup> The classics also emphasize on repeated *Shodana* in *Kushtha*. Along with this; vitiation of *Rakta* and *Pitta* is also mentioned in all *Twaka Vikaras*. *Virechana Yoga* is

mentioned in *Charak Samhita Kustha Chikitsasthan*<sup>[3]</sup> for conducting *Virechana*, as *Virechana* procedures are considered as major procedures for removing *pitta, rakta dosha*.<sup>[4]</sup>

*Virechana yoga* consists of 5 drugs- *Amalaki, Bibhitaki, Haritaki, Trivrit, Danti*. Most of the drugs are *Khasaya, Tikta, Laghu, Suksma, Ruksha, Adhobhaghara guna* which are helpful in purgation and *Kustha roga*.

In the present study, the formulation is subjected to Pharmacognostical and pharmaceutical analysis. Preliminary organoleptic features and results of microscopy were verified and all the ingredients were proved to be authentic

## MATERIALS AND METHODS

### Collection, identification and authentication of raw drug

Dried specimens of mature fruits of *Haritaki, Bibhitaki, Amalaki, Trivrit, Danti*, were procured from the Pharmacy of I.P.G.T. & R.A. G.A.U. Jamnagar.

### Preparation of drug

The obtained fruits, Roots and were shade dried and made in to coarse powder or *yavakuta* separately with help of mechanical grinder, and finally all the powders were mixed and a coarse powder as a *Virechana Yoga* was prepared.

### Pharmacognostical study

The Pharmacognostical study comprises of organoleptic study and microscopic study of finished product.

### Organoleptic Study

The Organoleptic characters of Ayurvedic drugs are very important and give the general idea regarding the genuinity of the sample. Organoleptic parameters like Taste, Colour, odour and touch were scientifically studied in Pharmacognosy laboratory, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.<sup>[5]</sup>

### Microscopic Study

*Virechana Yoga* was dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of *Mustadi Ghana* was also taken under Corl-zeiss trinocular microscope.<sup>[6]</sup>

### Physico-chemical analysis

*Virechana Yoga* was analyzed using various standard physico-chemical parameters such as Loss on drying, water soluble extract, alcohol soluble extract etc.<sup>[7]</sup>

### High Performance Thin Layer Chromatography (HPTLC)

HPTLC was performed as per the guideline provided by API. Methanolic extract of drug sample was used for the spotting. HPTLC was performed using Toluene + Ethyl acetate + Acetic acid (14:4:2) solvent system and observed under visible light. The colour and  $R_f$  values of resolved spots were noted.<sup>[8]</sup>

## RESULTS AND DISCUSSION

### Organoleptic characters of *Virechana Yoga*

Organoleptic characters of *Virechana Yoga* such as color, odour, taste etc. examined by sensory organs and results are as shown in Table 2.

### Microscopic characters of *Virechana Yoga*

Diagnostic characters of *Virechana Yoga* were observed under the microscope and presence of all ingredients showed their different characters which are depicted in Plate 1. Fig.1-14.

### Physicochemical parameters of *Virechana Yoga*

Physicochemical parameters of *Virechana Yoga* such as ash value, water soluble extract, alcohol soluble extract, pH etc. results are shown in Table 3.

### HPTLC Study

Chromatogram shows 8 prominent spots at 254nm with maximum  $R_f$  value 0.02, 0.15, 0.38, 0.53, 0.63, 0.72, 0.76, 0.94 and 8 spots at 366nm with maximum  $R_f$  value 0.02, 0.38, 0.54, 0.62, 0.74, 0.76, 0.81, 0.94 (Plate 2, Fig. 1-2) and three dimensional densitogram is also shown. (Plate 3, Fig. 1-2).

**Table 1: Contents of *Virechana Yoga*.**

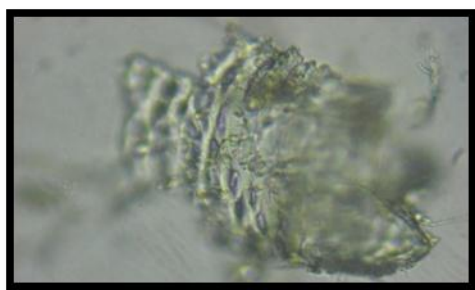
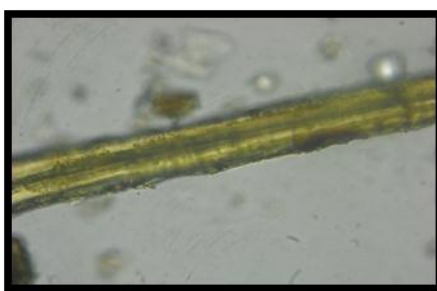
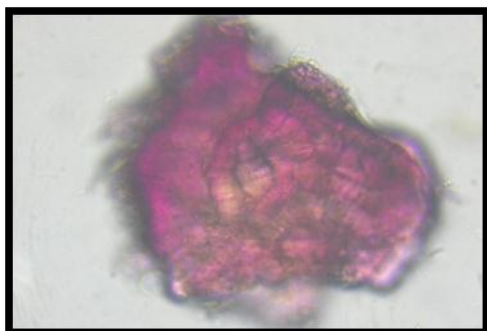
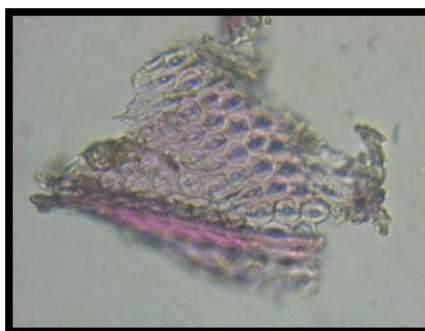
Sr. No.	Drugs	Botanical Name	Part to be used	Proportion
1	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	<i>Phala</i>	1 Part
2	<i>Bibhitak</i>	<i>Terminalia bellarica</i> Roxb	<i>Phala</i>	1 Part
3	<i>Aamalaki</i>	<i>Embllica officianalis</i> Gaertn	<i>Phala</i>	1 Part
9	<i>Trivrit</i>	<i>Operculina turpethum</i> Silva Manso	<i>Moola</i>	1 Part
10	<i>Danti</i>	<i>Balinospermum montenum</i> Muell. Arg	<i>Moola</i>	1 Part

Table 2: Organoleptic characters of *Virechana Yoga*.

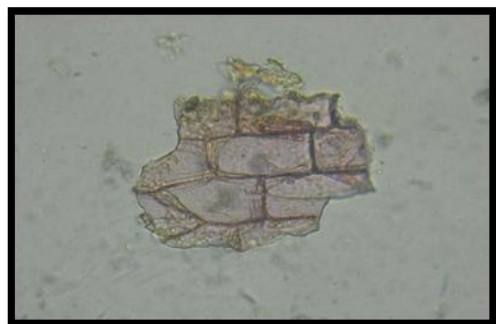
Sr. No.	Characters	Results
1	Colour	Creamish brown
2	Odour	Aromatic
3	Taste	Astringent
4	Touch	coarse

Table 3: Physicochemical parameters of *Virechana Yoga*.

Sr. No.	Test	Result
1	Loss on Drying	9.39 % w/w
3	Ash Value	11.35 % w/w
4	Acid insoluble ash	1.25 %
5	Water soluble extract	1.77 % w/w
6	Methanol soluble extract	24.10 % w/w
7	pH	6.5

Bordered pitted vessels of *Danti*Bordered pitted vessels of *Trivrit*Compound starch grains of *Trivrit*Cork cells in surface view of *Trivrit*Fibres of *Amalaki*Fibres of *Danti*Group of stone cells of *Haritaki*Lignified bordered pitted vessels of *Trivrit*Lignified bordered pitted vessels of *Danti*





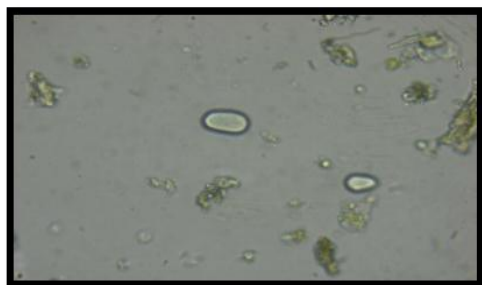
Lignified cork cells of *Trivrit*



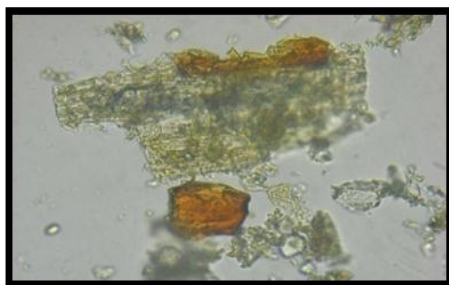
Lignified fibers of *Danti*



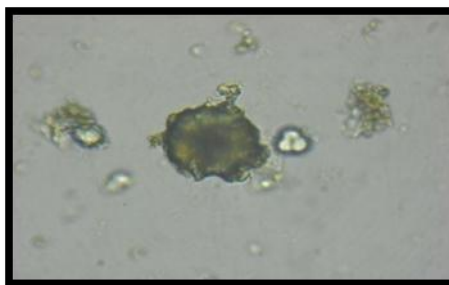
Lignified fibers of *Trivrit*



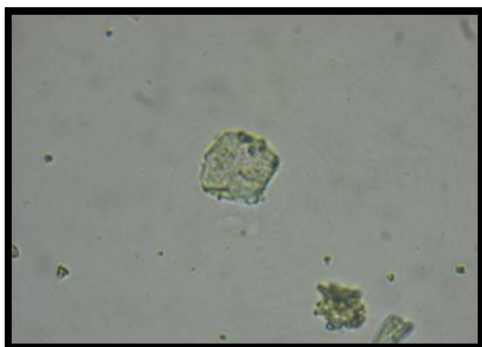
Oil globule of *Danti*



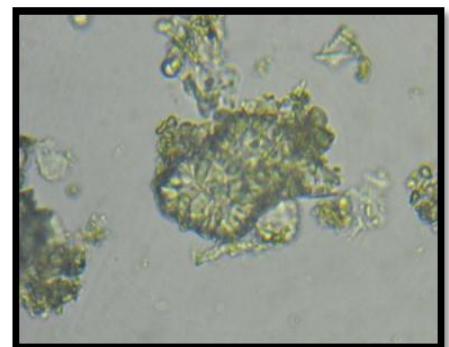
Resine content of *Danti*



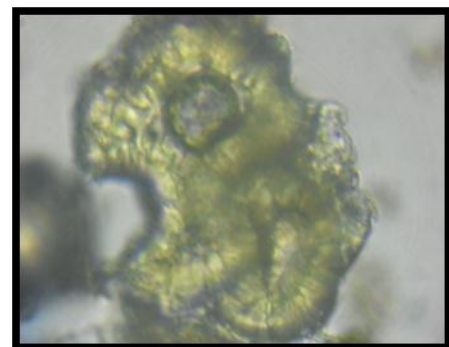
Rosset content of *Trivrit*



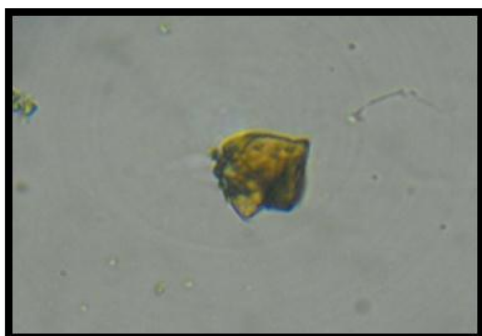
Silica deposition of *Amalaki*



Stone cells of *Bibhitaki*



Stone cells of *Haritaki*

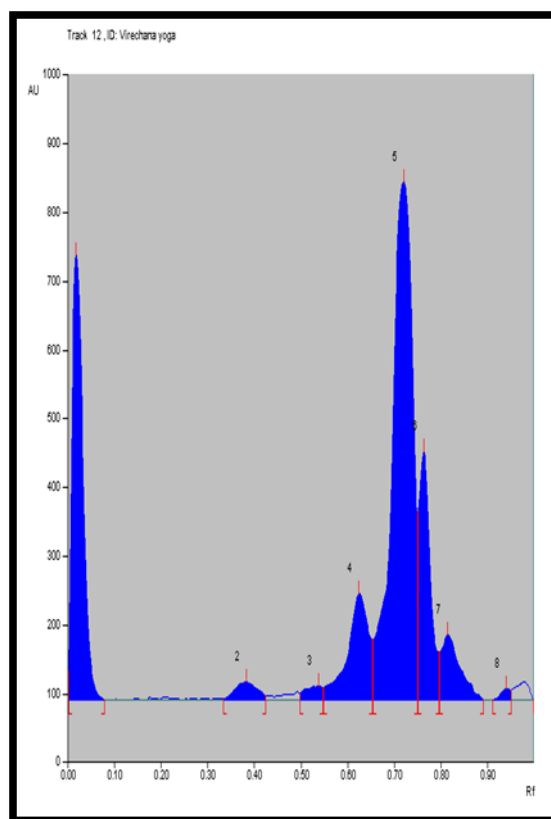
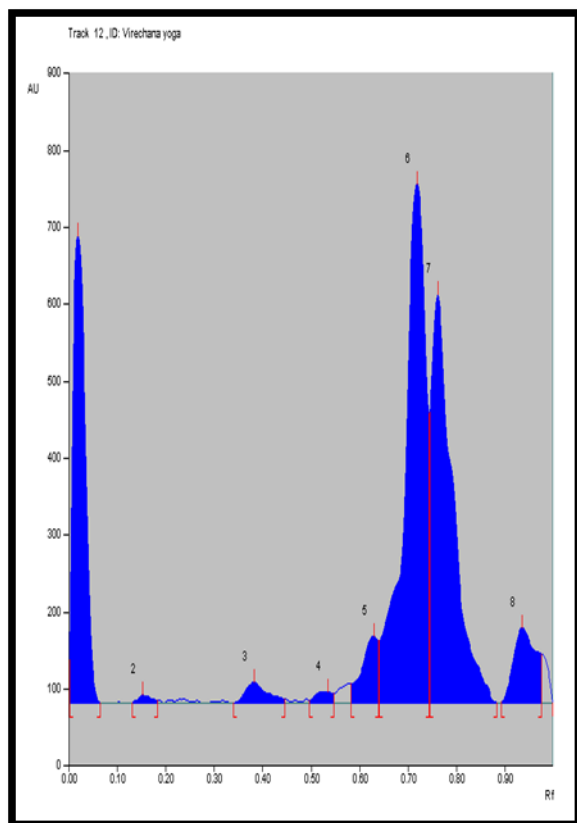


Tannin contents of *Trivrit*



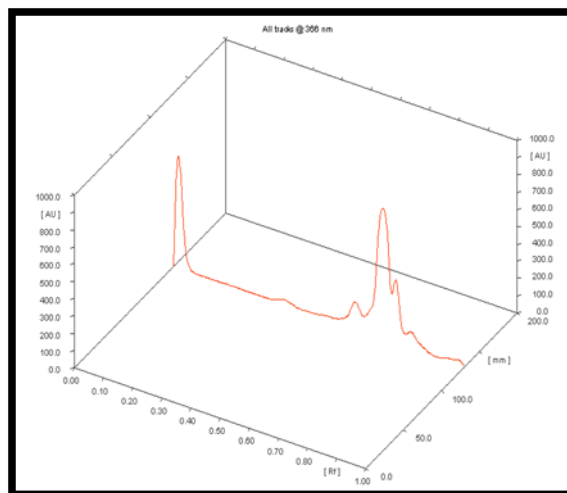
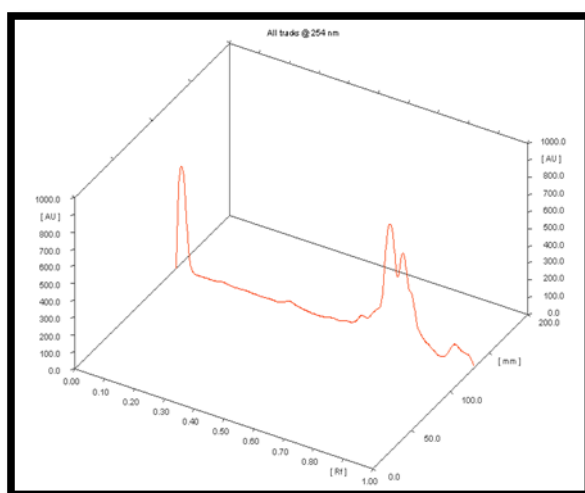
Trichome of *Bibhitaki*

Plate 1: Microscopic characters of *Virechana Yoga*.



Peak display at 254 nm

Peak display at 366 nm

Plate 2: Densitogram of *Virechana Yoga* at 254 nm and 366 nm.

254 nm

366 nm

Plate 3: Three dimensional HPTLC (3D) Densitogram.

## CONCLUSION

Quality control analysis of any formulation is very much necessary to assess its safety, purity and universal acceptability for the particular disease. Standardization is a measurement for

ensuring the quality control enabling the reproducibility of the formulation. The pharmacognostical and physico chemical analysis of *Virechana Yoga* confirmed the purity and genuineness of the drug. Further studies may be carried out on this formulation on the basis of observation made and results of experimental studies. This study may be beneficial for future researchers and can be used as a reference standard in the further quality control researchers.

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