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'Agua-Phobia' a Necessary Prerequisite for Healing Psoriasis- Proof from Psorolin B

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Abstract

In the present paper we have described the importance of the degree of agua-phobia characteristics of Psorolin B ointment and how such formulation would exceptionally be useful in treating Psoriasis. The ecosystem outside of is high in water (in the form of humidity) and skin also has the property of excreting various waste metabolites through sweat which would eventually both hinder and remove water soluble constituents from skin easily whereas such removal would be low if the constituents are agua-phobic. Scientific aspects of the study methodology and findings are given in detail in the article.

Keywords: Agua-Phobic; Hyperkeratotic Skin; Red Ochre; Wrightia Tinctoria; Boswellic Acid

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Introduction

The desquamated, hyperkeratotic skin of psoriatic patients requires multi-prong treatment approaches starting from exfoliation of the deposited stratum corneum cells to providing moisturization to the skin to ensuring occlusion to prevent the trans-epidermal water loss. Regaining the lipid balance is also equally essential to normalize the skin condition [1-4].

The dermatological cream/ointment for treating Psoriasis must have the actives and also the base armamentarium to achieve the above treatment benefit. But the medical attention has been given largely to the actives than the 'carrier' of the actives such as ointment/ointment base [5-8].

Dr. JRK's Research and Pharmaceutical's has been studying the pathological dynamics of psoriasis for more than three decades and from our intense study we have evolved a formulation – Psorolin B and also a suitable table top evaluation method to arrive the efficacy of the ointment for psoriasis.

Psorolin B is a super fatted specialist ointment scientifically synchronized with the diurnal and nocturnal pathology and treatment requirement of psoriasis. The formulation is comprised of the medicinal herbs such as Boswellia serrata, Hydnocarpus igdhiana, Wrightia tinctoria, Cynodon dactylon, and red ochre, the source of Vitamin D - cheese, and Vitamin E.

The liposomal actives require high lipid base and also the same must exhibit 'agua phobia' from the external environment. Such property of any ointment always would offer high emulsion stability due to the stable binding of liposomal actives in the ointment. The above property of the ointment must show stability under different situations and only then the 'agua phobia' behavior of the ointment can be expected to deliver the best therapeutic value. The present study gives a detailed account on the 'agua phobia' nature of Psorolin B and associated treatment benefits.

Materials and Methods

Flotation time in water with different pH

Ten gram of the ointment was placed in 200 ml of distilled water adjusted to different pH such as pH 6.2, pH 7 and pH 8.0 and then noted the floating time of the ointment versus proportion of sinking.

Flotation time in water with different temperature

Ten gram of the ointment was placed in 200 ml of distilled water adjusted to different pH as described above with three different temperatures such as 30 and 45 and 60 C and then recorded the floating time of the ointment versus proportion of sinking.

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Stability of floating ointment under rotational pressure

Ten gram of the ointment was placed in 200 ml of distilled water pH 7, temperature 30C. A magnetic rod was then placed in the water and the beaker was kept on magnetic stirrer. The stirring force applied was 5 rotations per 30 minutes. Floating time of the ointment versus proportion of sinking was noted.

Results

Flotation time in water with different Ph (Table 1)

The ointment exhibited absolute agua phobia behavior up to 24 hr in water with pH 6.2 and 7.0. Whereas in water with pH 8.0, a portion of ointment sunk to the bottom on hr 3 and the rate of sinking increases with increased length of incubation time.

Flotation time in water with different temperature (Table 2)

The agua phobia behavior of the ointment remained stable up to 24 hr in water with 30 and 45 C whereas when the temperature of the water was 60, the agua phobia behavior of the ointment got gently weakened after hr 6.

Stability of floating ointment under rotational pressure (Table 3)

The agua phobic behavior of the ointment got diminished with increased rotation which showed linearity with time.

Discussion

Agua phobic behavior of an ointment is often used to describe the physical stability of the ointment, especially the emulsion linked stability. Agua phobic behavior however must be linked with the flotation property as well as the flotation time and only then the real Agua phobic trait can be determined.

Table 1. Flotation time in water with different pH.

pH details	Time of floating / proportion (100%)					
	1	3	6	8	12	24
6.2	100	100	100	100	100	100
7.0	100	100	100	100	100	100
8.0	100	98	90	90	80	70

Table 2. Flotation time in water with different temperature.

Temperature	Time of floating (h) / proportion (100%)					
	1	3	6	8	12	24
30	100	100	100	100	100	100
45	100	100	100	100	100	100
60	100	100	98	98	90	90

Table 3. Stability of floating ointment under rotational pressure.

Rotation speed	Time of floating (h) / proportion (100%)					
	1	3	6	8	12	24
5 rpm	100	100	100	100	100	98
10 rpm	100	100	100	90	80	70
20 rpm	100	100	90	80	70	60

Psorolin B is a supper fatted ointment formulated for treating Psoriasis. The ointment contains both lipid soluble and hydro soluble extracts. From the formulation description, Psorolin B is perfect water in oil ointment where the oil outer phase overlays the hydro molecule from all sides possibly also exposing the lipophilic head of the emulsifier towards the periphery. The liposomal molecules, according to their solubility, occupy different positions.

The outer oil phase is expected to resist the interaction scope of the ointment with water and thereby would reduce the water activity and associated microbial contamination scope. On dissociation during usage, emulsion is likely to turn into a mixture; the water soluble compounds may permeate fast into skin and may stagger the permeation of liposomal agents for a while resulting in the formation of an occlusive cover to the skin.

For psoriatic skin, the occlusive cover is essential so that the trans-epidermal water loss can be prevented and so does the dominance of pro and pre inflammatory mediators can be silenced or annulled. The Psoriatic skin require water loss prevention more than providing hydration effect from the humectants because skin hydration and humectancy are in situ nature and are not obtained from the external environment as like the epiphyte – vanda. Therefore the topical preparations for Psoriasis must offer their masculine contribution towards supper fattening the skin and then sub-lateral humectancy.

Our experiment with Psorolin B has shown that the ointment continue to exhibit its agua phobic behavior up to 24 hr in most conditions that are static in nature. Elevated temperature, high pH and high rotational forces for reasonably longer time period alone could quash the agua phobic behavior, gently. Even under such situation, the separation was seen more as beads and coagulants than as perfect separation of hydrophilic and lipophilic materials. However to gentle physical pressure, the ointment also exhibited complete vanishing property which clearly suggest both stability of the ointment and also the easy dissociation and delivery during application.

Our experiment on flotation behavior or agua phobic behavior of Psorolin B and time of water resistance clearly show that the ointment may provide the much needed cuticle like protection to the Psoriatic skin and thereby deliver the actives in a timed manner. The actives used in the ointment such as Boswellia serrata, Hydnocarpus igdhiana, Wrightia tinctoria, Cynodon dactylon, and red ochre, the source of Vitamin D - cheese, Vitamin E and salicylic acid are proven to have great therapeutic value for Psoriasis [9,10]. The phytoactives of Boswellia serrata, boswellic acid has steroid like activity while the stellar bodies of Hydnocarpus igdhiana are expected to offer nano level passive exfoliation and sub-dermal permeation of other actives. Red orchre balances the ferritin requirement to the Psoriatic skin while vitamin D and E provides both sterol and antioxidant benefit required.

Psorolin B is a proprietary Siddha medicine formulated with a combo of vitamins, iron ore and herbal constituents to collectively give the complete pathological and treatment requirement of

Psoriasis. We have formulated this ointment synchronizing with the diurnal and nocturnal treatment needs of Psoriasis where the etiological triggers of the disease during the day are different from that of the night and so is the clinical manifestation. Therefore the trigger and manifestations alternate with time making the problem chronic.

We have conceptualized both modern medical science and astute wisdom of ancient Siddha system of medicine to formulate Psorolin B.

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