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Two Products to Prevent and Maintain Healthy Vagina

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Short Communication

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Abstract

A common problem that women face is to maintain healthy vagina. It is an extra-ordinary organ. While the normal pH of the body is 7.4, the pH of a healthy vagina is around 4.5. The acidic pH of the vagina in contrast to rest of the body is maintained by lactic acid secreted within vagina by the Probiotic Lactobacilli resident on the endometrium of the vagina. In case the Lactobacilli are diminished and/or are not making sufficient lactic acid, the pH of the vagina is increased and goes beyond 5, women get infected with a variety of aerobic and anaerobic micro-organisms. In this condition, named as Vaginosis, women have abnormal vaginal discharge accompanied at times by putrid smell. Antibiotics are employed by clinicians to treat Vaginosis. Better products need to be developed to cope with vaginosis, as well as prevent sexually transmitted infections.

Keywords: Probiotic; Bpamplicon; Polyherbal; Emblicaofficinalis

Introduction

Lactobacilli Resident in Vagina

Many years back, we isolated with their consent, lactobacilli from 80 women whose vagina was healthy. These were characterized on the basis of Genus, Group and Species by PCRs along with Random Amplified Polymorphic DNA (RAPD) and 16s rDNAs analysis [1]. Figure 1 is a representation of the variety of lactobacillus species present in healthy vagina of women.

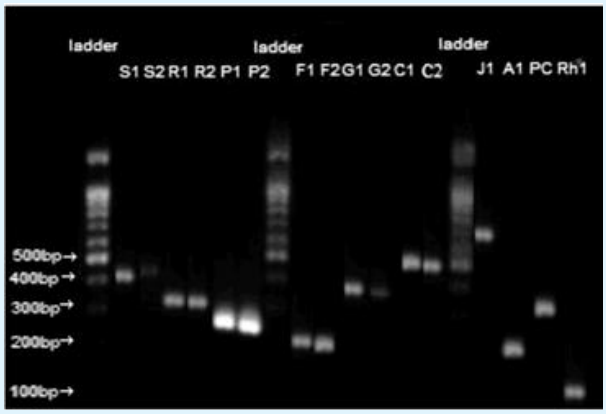


Figure 1: Species specific PCR products of the 10 species of Lactobacilli isolated from healthy vagina. This representative figure shows the profiles of 2 isolates of each of the 6 species and 1 isolate of the rest of 4 species as viewed on 2% agarose gel. S1 and S2, L. salivarius strains, 400 bpamplicon; R1 and R2, L. reuteri strains, 300 bpamplicon, P1 and P2, L. plantarum strains, 250 bpamplicon; F1 and F2, L. fermentum strains, 200 bpamplicon; G1 and G2, L. gasseri strains, 350bp product; C1 and C2, L. crispatus strains, 500 bp PCR amplicon; J1, L. jensenii, 700 bpamplicon; A1, L. acidophilus, 200 bp PCR amplicon; PC, L. paracasei, 300 bpamplicon; Rh1 L. rhamnosus, 100 bpamplicon (adapted from 1).

What was amazing was the vast difference between the amount of lactic acid made by various strains. Some, especially from women with healthy vagina make high amounts of lactic acid, whereas those isolated from women suffering from vaginosis, make much lower amount of lactic acid Figure 2.

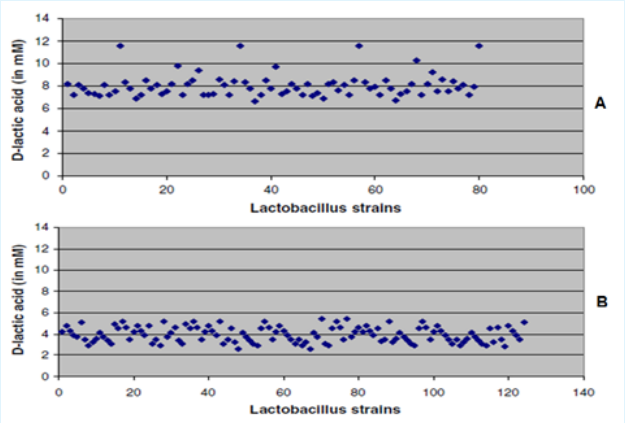


Figure 2: D-lactic acid production by 80 Lactobacillus strains from women with healthy vagina and 124 strains from women suffering from bacterial vaginosis [2].

Amongst other desirable properties of lactobacilli, are hydrophobicity enabling their colonization, enzyme arginine deminase, which prevents the formation of foul odour derivatives. Many strains also make and secrete H_2O_2 enabling hygienic maintenance of these bacilli.

On basis of desirable properties, we selected 3 strains of lactobacilli. These are L. salivariusTRF # 30, L. fermentum TRF # 36 and L. gasseri TRF # 8. These have been patented and passed onto industry for availability to women in need. Combination of these 3 meritorius lactobacilli strains is named as Pro-vag-Health.

Polyherbal Formulation BASANT

In order to treat the variety of aerobic and anaerobic infections in Vaginosis, and also if possible prevent sexually transmitted infections, we developed a Polyherbal formulation, which we named as BASANT in view of its colour due to Curcumin (diferuloylmethane), a prominent component of the formulation. Other ingredients of BASANT are: purified extracts of Amla (Emblica officinalis), Aloe vera(Aloe barbadensis) and Neem (Azadirachta indica) leaves along with pharmacopoeially approved excipients [3].

BASANT inhibits a wide range of genital pathogens such as all WHO strains of Neisseria gonorrhoeae, and also those resistant to antibiotics such as Penicillin, Tetracycline, Nalidixic acid and Ciprofloxacin [3]. It is also effective against Candida glabrata, Candida albicans and Candida tropicalis isolated from women with vulvo-vaginal candidiasis, including strains resistant to azole drugs and amphotericin B [3]. BASANT inhibits Chlamydia trachomatis, whether present in free-state or within a cell [4].

The ability of BASANT to inhibit HIV is also noteworthy. Even at 1000 fold dilution, it inhibits a variety of HIV clades entering the blood lymphocytes employing either CXCR4 or CCR5 receptors [5]. BASANT exercises both preventive and therapeutic action against Human Papilloma Virus (HPV). HPV-16 and HPV-18 are amongst the most dominant strains of HPV, which lead to carcinoma of cervix. 2 ingredients of BASANT namely Amla (Emblica officinalis) and Aloe vera (Aloe barbadensis) inhibit the transduction of HPV-16 in Hela cells at concentrations far below those that are cytotoxic and those used in the formulation [3]. BASANT inhibits the entry of the highly pathogenic strain of HPV-16 in cervical cells. What is further amazing is that BASANT eliminates HPV-16 from infected cervical cells on path to carcinoma of cervix till the stage that virus is not yet integrated into the host genome. The virus is expelled and Pap smear is rendered normal by 30 night intake of BASANT capsule [6]. Table 1 given below summarizes the observations made on HPV patients.

Patient No.	Age	Parity	HPV-16	HPV-16
			Pre-treatment	Post-treatment
1	42	3+0	+VE	NEGATIVE
2	27	4+0	+VE	NEGATIVE
3	35	3+0	+VE	NEGATIVE
4	28	1+1	+VE	NEGATIVE
5	45	3+0	+VE	NEGATIVE
6	35	4+0	+VE	NEGATIVE
7	30	2+1	+VE	NEGATIVE
8	45	2+0	+VE	NEGATIVE
9	38	5+2	+VE	NEGATIVE
10	35	3+1	+VE	NEGATIVE
11	38	3+1	+VE	NEGATIVE

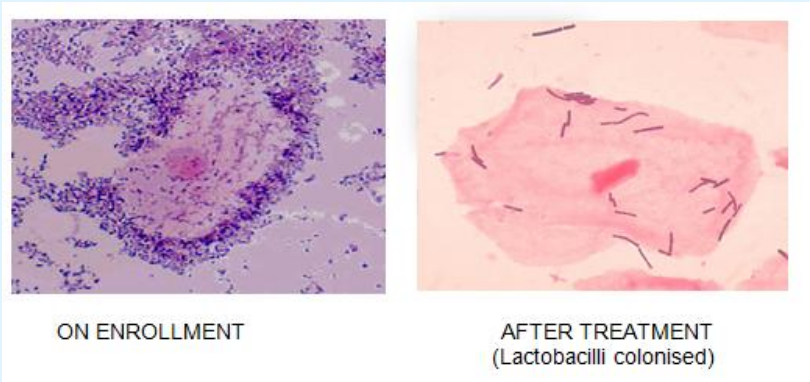
Table 1: Pre and post treatment with BASANT of HPV-16 positive patients [6].

Treatment of Vaginosis by a Combination of BASANT and Pro-Vag-Health

BASANT and probiotic lactobacilli, Pro-vag-Health, show synergy in terms of treating Vaginosis effectively. Intra-vaginal intake of BASANT alone for 7 nights cures 70% of women suffering from it. Combination of BASANT with 3 Probiotic strains of meritorious properties raises the cure rate to 95%. Nearly every woman recovers from Vaginosis[7]. Figure 3 illustrates the relief brought by the combination of BASANT and Probiotics strains.

(a) Relief from abnormal vaginal discharge

(b) Disappearance of Clue cells



(c) Healing of fishy odour

Fishy Odour (After KOH addition on slide) On Enrollment → **No Fishy Odour** (After KOH addition on slide) after Treatment

(d) pH of vagina restored to acidic range

pH> 5 On Enrollment → pH < 4.5 after Treatment

Figure 3: An illustrative representation of a typical woman receiving treatment with combination of microbicide and BASANT alone or along with Pro-vag-Health Probiotics strains [7].

Summary

Described briefly are 2 highly useful products for vaginal health of women: 3 super Lactobacilli strains and a Polyherbal formulation BASANT.

Acknowledgements

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