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FOR MORE
TRANSPARENCY”**

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PROBIOTICS IN SKIN MICROBIOME CARE

Active ingredient | Redness and itching on the skin are often a sign of diseases in which the skin microbiome is no longer in balance. Scientists managed to identify a bacterium that could help restore this imbalance. Prof Dr Christine Lang reports on the positive effects it can achieve.



► **Prof Dr Christine Lang,**
CSO, Belano medical,
Hennigsdorf, Germany,
www.belanomedical.com

The skin microbiome is proving to be the next dimension in skin care. So far, the concept of the microbiome and products specifically addressing it have been missing from many existing skin care regimes.

The microbiome revolution started when researchers realised that **the skin flora needs to be in the focus when treating irritated and diseased skin.** The natural microbiome becomes seriously disturbed in situations where our skin is stressed. And it is literally destroyed in cases of skin disease, such as atopic dermatitis. Human skin is normally covered and protected by commensal bacterial friends such as *Staphylococcus epidermidis*. Once the healthy

microbiome is disturbed, the skin is no longer shielded from external damage. Instead, an inflammation bacterium can spread without control: *Staphylococcus aureus*, typically found in wounds, can take up all the space on the skin.

Restoring by probiotic cellular components

On healthy skin, the inflammatory bacterium *S. aureus* is kept in check by its natural antagonist *S. epidermidis*¹. *S. epidermidis* produces short proteins that kill *S. aureus*. Scientists from the Jikei University School of Medicine in Tokyo, Japan, demonstrated that *S. aureus* completely disappears after just two days when *S. epidermidis* is present as well².



S. epidermidis is also helping with the management of acne skin³. And here, the second part of the microbiome revolution begins: as soon as researchers discovered that ***S. epidermidis* is the key for natural skin health and beauty**, they consequently developed a care regime to support and stimulate the growth of this bacterium on the skin while at the same time fighting the pathogen *S. aureus*⁴.

Key probiotic bacterium

After a diligent search of a large strain collection, finally, one probiotic bacterium (called *Lactobacillus brevis* DSM17250) was discovered

actions on the skin) function as signal molecules for *S. epidermidis* and other commensal ("healthy") bacteria. They "nudge" them to start multiplying after they have been washed away, e.g. by showering or hand disinfection. **The small peptides are harvested as active "cell soup"** from the probiotic bacterium *L. brevis*. This is meticulously composed into an active concentrate, also called "active essence", and then carefully formulated into creams, hydrogels, and sera. Both the lactobacillus strain and the process to arrive at the bioactives are unique and patent protected.

"PROBIOTIC LACTOBACILLUS CONCENTRATE
REGENERATES THE SKIN MICROBIOME AND
HELPS TO RESTORE SKIN FUNCTIONS"

Prof Dr Christine Lang, Belano

that stimulates the growth of *S. epidermidis*. The natural **subcellular components of this probiotic *Lactobacillus brevis* hold the key for this intriguing finding**: small peptides (peptides are known for a range of beneficial

In skin care practice

A new active ingredient⁴, obtained from probiotic *Lactobacillus brevis* DSM17250, triggers the natural process of skin microbiome regeneration. Care products that contain that



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The participants in the user study confirmed a high level of effectiveness against redness and itching.

active ingredient as their signature component activate the skin's natural defences. They **stimulate resident *S. epidermidis* microbiota** and help them **displace the inflammatory bacteria** within a very short time.

This activation process has been observed in a clinical study. Commensal "good" bacteria are significantly replenished on the skin by using a care product containing the active ingredient, compared to a placebo control. Skin analyses show a significant improvement of the skin appearance and important skin parameters at the same time. In particular, the skin barrier, which is disturbed in dry and sensitive skin, is profoundly regenerated⁵.

User study

A novel user study with 143 individuals has now shown that not only stressed skin benefits from restoring and strengthening the bacterial shield, but also skin affected by atopic dermatitis, psoriasis, rosacea, and acne. After a few days of applying such skin care products, damaged skin is regenerated, and symptoms are relieved.

Volunteers suffering from skin problems such as atopic dermatitis, psoriasis, rosacea, or acne were included in an application study over a period of

four weeks. 143 evaluable questionnaires were returned after the end of the study.

As a target parameter the efficacy of the application of the formulations was observed with respect to the symptoms of atopic dermatitis, psoriasis, rosacea and acne. In addition, the tolerability of the products as well as the satisfaction of the participants and their willingness to recommend and continue using the products were examined.

The following symptoms were named as particularly distressing (very strong/strong):

- Redness (78 % of mentions)
- Skin tightness (76 % of mentions)
- Itching (76 % of respondents)

- Changed skin appearance (72 % of the mentions).

The study revealed that **more than 90% of users were highly satisfied with the efficacy** of the products. Recommendation rates were close to 90%. Questioned on the **effectiveness for rosacea, atopic dermatitis, acne, and psoriasis, as many as 80 – 90% of the participants rated it as "very strong or strong"**. Symptoms of the diseases were significantly reduced within a few days. Some of the test persons were able to stop using their prescribed cortisone-containing preparations.

Regarding the leading therapeutic symptoms, an **improvement of the skin appearance was achieved in almost**

Symptom Improvements rated as "very strong/strong" in %

Itching	87
Redness	87
Burning	81
Pain	81
Scaliness, dryness	85
Poor skin condition	84

table 1: Efficiency of ibiotics med formulation in atopic dermatitis, psoriasis-, rosacea and acne patients.

90% of the cases. Skin scaling, itching and redness also decreased significantly.

The effect of the used products⁶ on the particularly distressing symptoms is rated as “very strong/strong” by more than 80% of all participants.

Table 1 shows the results after using a cream that contains high concentrations of the active ingredient.

The participants attested a “**good to very good**” skin tolerability in 88% of the cases. Slight and reversible side effects (itching, redness) were reported by 2.1% of the participants.

Overall, the data shows that the skin care products are used with particularly high success for relieving itching and redness. Also improving flakiness and dryness of the skin and skin appearance are rated with very high marks.

The high effectiveness of a lotion in the categories “improvement of flakiness and dryness of the skin” as well as “improvement of the skin’s appearance” underlines the importance of the skin lotion for basic skin care even with only slightly disturbed skin.

For a healthy microbiome

Products containing the new active ingredient use a completely new therapeutic approach. They rely on the ability of natural bacteria to



If the skin’s microbiome is disturbed, the inflammatory bacterium *Staphylococcus aureus*, which is typically found in wounds, can quickly spread over the entire skin.

improve the skin flora (microbiome) and to regenerate it sustainably. By correcting the microbiome, highly regenerative and care effects can be achieved.

The contained active ingredient sustainably stimulates the beneficial, protective bacterial diversity on the skin. Harmful bacteria, such as the skin pathogen *Staphylococcus aureus*, are displaced. The microbiome regenerates and the skin’s natural self-healing powers are mobilised. The skin barrier and the immune system are strengthened. □

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