

# BIOTILYS®

PATENT

## SKIN MICROBIOTA BALANCE



PROTECTION

BIOTILYS®

PHYTOBIOACTIVE

BIOTECHNOLOGY

### > ACTIONS

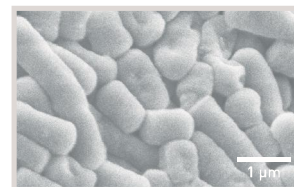
- Maintains skin microbiota balance
- Promotes the diversity of the commensal microbiota
- Reinforces the epidermal barrier
- Protects skin against external aggressions
- Improves moisturization
- Soothes, calms and reduces redness

NEW  
RESULTS

### ORIGIN

**OBTAINED BY OPTIMIZED FERMENTATION OF *Lactobacillus pentosus***

BIOTILYS®, an innovative active substance that draws its benefits from probiotics; a new solution obtained from an original micro-organism, a lactic acid bacteria: *Lactobacillus pentosus*



### > MECHANISM OF ACTION

Skin carries out its protection against the hostile environment. Probiotics, by keeping the epidermal barrier intact, can preserve the skin homeostasis. Acting as a short and long term global protector, BIOTILYS® increases the diversity of commensal cutaneous microbiota and maintains the balance of a healthy skin, allowing it to withstand aggressions, and to keep a beautiful appearance.

### > COSMETIC BENEFITS

- Skin is moisturized and smoother,
- The complexion is mattified, bright and uniform.
- Skin is soothed, constantly protected against environmental aggressions,
- Redness is clearly reduced.

### > COSMETIC USES

- ▶ **Protective and repair care products**
- ▶ **Sensitive, reactive and with atopic tendency skin care products**
- ▶ **Moisturizing care products**

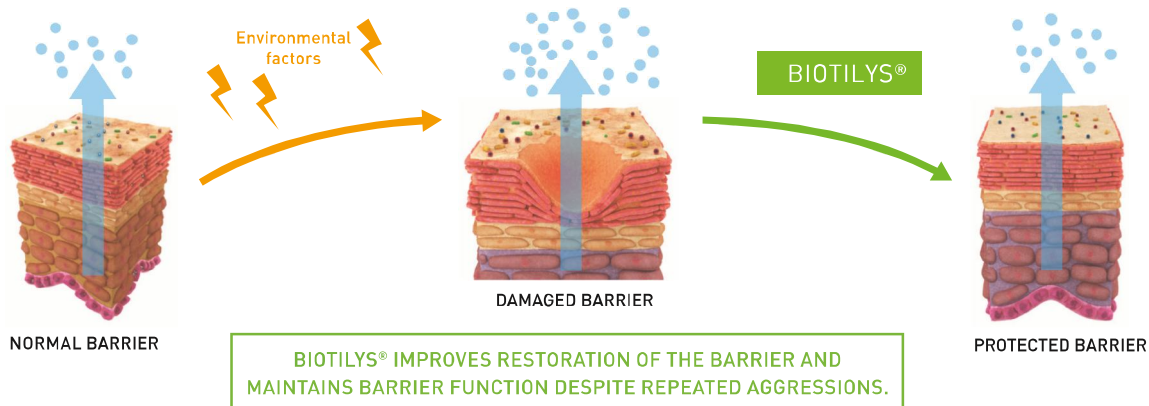
> SCIENTIFIC PROCESS

• Skin barrier homeostasis

An intact epidermal barrier means normal homeostasis, balanced and healthy skin capable of defending itself. Conversely, a damaged barrier leads to a loss of homeostasis, an unbalanced and impaired, irritated and inflamed skin with premature wrinkles.

• Probiotics

Probiotics offer numerous benefits for health: they participate in the management of the immune system, inhibit growth of certain pathogens, balance homeostasis, reinforce barrier function and prevent dysfunctions. Thanks to their regulatory and re-balancing action, they may promote skin health and beauty. This latter is better able to withstand aggressions and regenerates better and more rapidly. GREENTECH used this potential to create BIOTILYS® from these bacterial strains, which are developed and produced by BIOVITIS (Greentech's Company, dedicated to microorganisms).

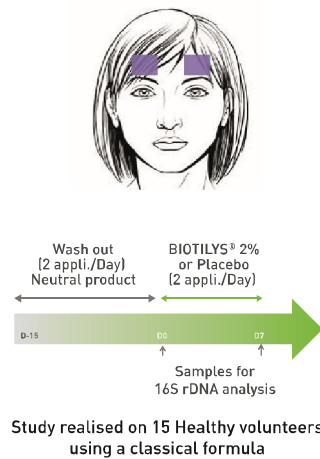
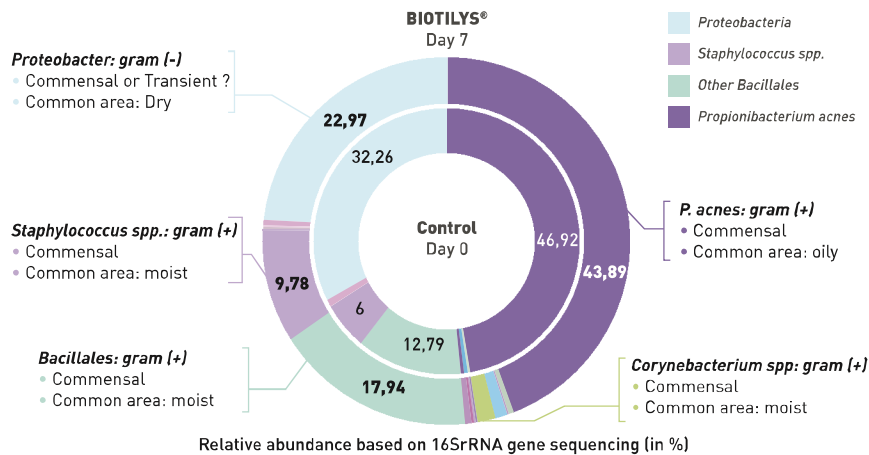


> PROVEN EFFICACY

**ACTION ON MICROBIOME**

• BIOTILYS® diversifies commensal microbiota without disturbing original balance

IN VIVO TESTS



• BIOTILYS® preserves the balance of the two representatives *S.aureus* and *S.epidermidis*, it maintains the duality between the 2 species

IN VITRO TESTS

	Population <i>S.epidermidis</i>	
	After 5h	After 8h
<b>WITHOUT BIOTILYS®</b>	<b>-98%</b>	<b>-100%</b>
<b>WITH BIOTILYS®</b>	<b>-34%</b>	<b>+36%</b>

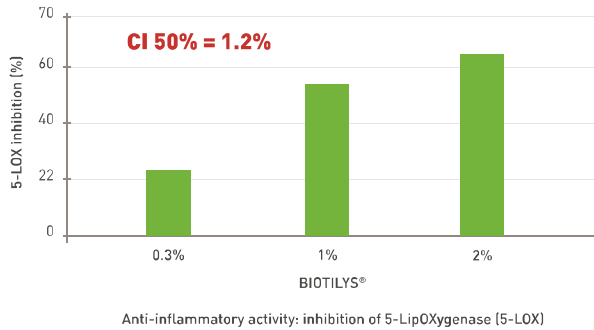
Co-culture of 2 cutaneous strains, *S. epidermidis* and *S. aureus* with an initial inoculum of 10<sup>5</sup> CFU/mL in proportion 80%/20%

**BIOTILYS® MAINTAINS THE BALANCE OF COMMENSAL MICROBIOTA AND PROMOTES ITS DIVERSITY.**

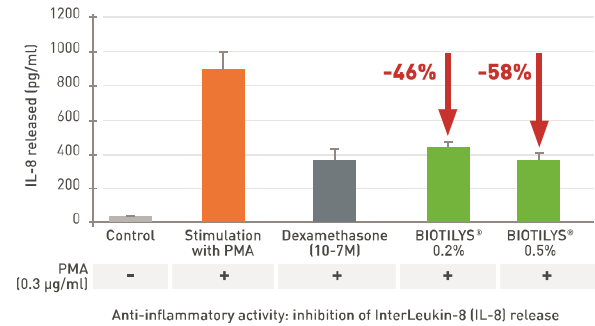
## ACTION ON INFLAMMATION

IN VITRO TESTS

- BIOTILYS® strongly inhibits 5-LOX activity, an enzyme involved in the inflammatory response



- BIOTILYS® markedly reduces the release of IL-8, a key cytokine involved in the inflammation process

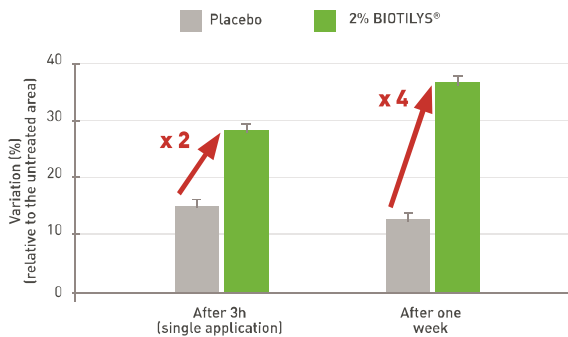


BIOTILYS® REDUCES THE INFLAMMATORY MECHANISM.

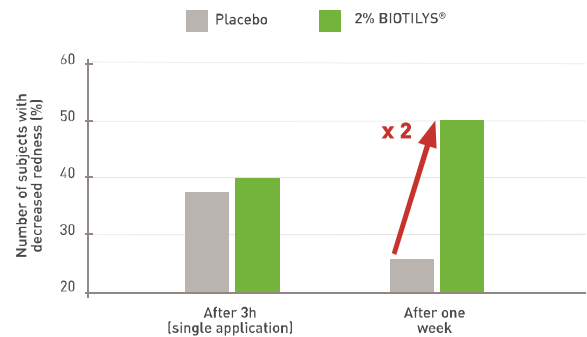
## ACTION ON MOISTURIZATION AND COMPLEXION

IN VIVO TESTS

- Increases moisturization (Corneometer® measurements)



- Strong reduction in facial redness



BIOTILYS® IMPROVES SKIN MOISTURIZATION.

## ACTION ON EPIDERMAL BARRIER

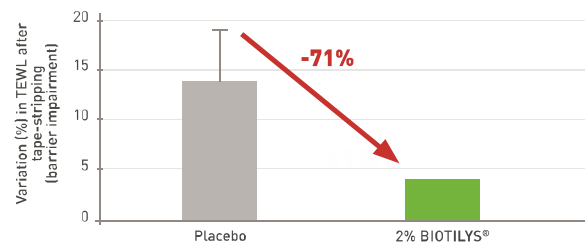
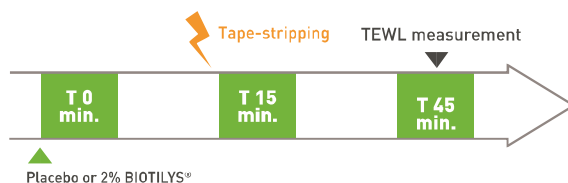
IN VIVO TESTS

Trans-epidermal water loss (TEWL) is a known indicator of homeostasis. An increase in TEWL suggests that skin barrier has been damaged, while a decrease in TEWL indicates that barrier is protected or has been restored

SHORT-TERM changes

### A) IMMEDIATE EFFICACY

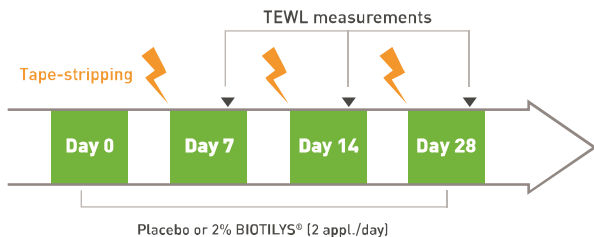
- BIOTILYS® reduces TEWL by a factor of 3.5 vs placebo



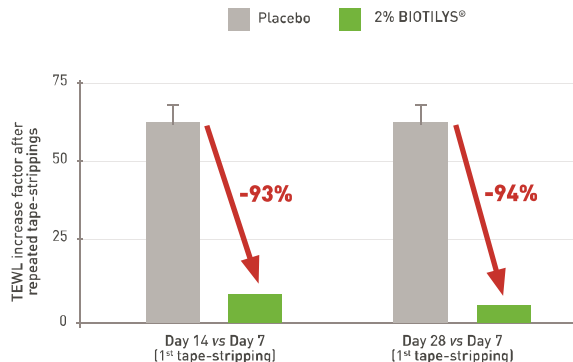
FROM THE 1ST APPLICATION, BIOTILYS® EFFICIENTLY PROTECTS SKIN BARRIER.

## B) FOLLOWING REPEATED AGGRESSION: DURABLE PROTECTION

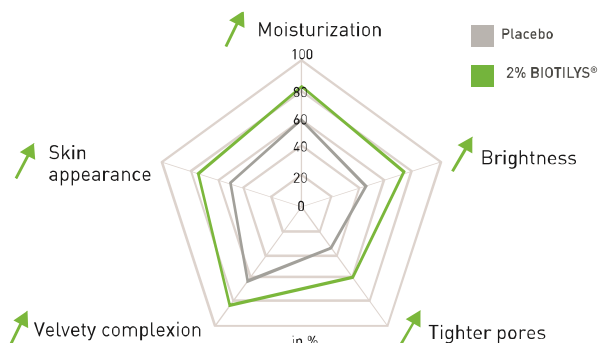
- BIOTILYS® limits TEWL increase **16 times** more effectively than the placebo



LIMITATION MAINTAINED OVER TIME,  
DESPITE RENEWED EXTERNAL AGGRESSIONS.



## SELF-EVALUATION BY THE VOLUNTEERS



BIOTILYS® WAS WELL-LIKED BY THE VOLUNTEERS, WHO EXPERIENCED  
A GENUINE IMPROVEMENT IN THEIR COMPLEXION AND MOISTURIZATION.

## FORMULATION

**Concentration for use:** 2 %  
**pH for use:** 4.0 – 10.0

**Caution for use:**

Add to emulsions, at the end of the preparation process, either cold or at 35-40 °C, during cooling.

## TECHNICAL DATA

**Characteristics**

Organoleptic	Appearance: opalescent liquid Colour: yellow to beige
Solubility	Water: partially soluble [10%]

**Storage**

Keep in a dark place, in the original packaging, at an ambient temperature between 15 and 25 °C.

**Tolerance tests**

- Eye irritation: non-irritant
- Skin irritation: non-irritant
- Sensitization: very good skin compatibility
- Mutagenicity: non-mutagenic

INCI name: Aqua/Water, Lactobacillus Ferment Lysate

Preservative: Sodium benzoate, Potassium Sorbate

Authorized:

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