



A company inspired by nature and supported by science

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(GFT) 

The Green Ferment Tech®

Transformation of simple raw materials in a Ferment–Peptide Complex by a process that combines Natural ferment with a natural origin peptide

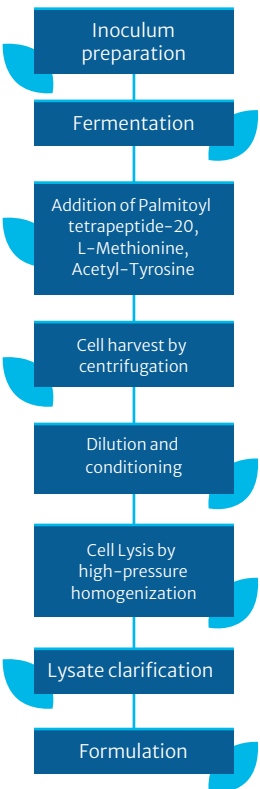
INNOVACTIVE PIGMENFERM

a Ferment–Peptide Complex rich in Catalase which plays a key role in inhibiting the hair greying process by stimulating the synthesis of melanin



| TECHNOLOGY | EFFICACY STUDIES | DOSSAGE | REGULATORY |
|------------------|--|---------|-------------|
| BIO FERMENTATION | In vitro evaluation of the pigmenting action on melanocytes Comparative evaluation of protective action against damages induced by H2O2 on melanocytes Color uniforming in vivo test Skin luminosity efficacy | 1–3% | EU AU US CA |

FLOWCHART FOR INNOVACTIVE PIGMENFERM PREPARATION



INNOVACTIVE FERMENTATION STRATEGY

Bacillus Subtilis originally obtained from Natto (the oldest Japanese food) during soybeans lactic fermentation, is fermented in the laboratory under controlled technological conditions in a specific medium with natural substrates and natural origin peptides having cosmetic properties.

During fermentation process, Bacillus Subtilis sp. Natto produces several bio actives peptides and enzymes playing key roles in skin cells.

The **INNOVACTIVE FERMENTATION STRATEGY** to obtain a Ferment–Peptide Complex is based on the addition of peptide during natural fermentation of Bacillus Subtilis grown with plant–derived nutrients.

INNOVACTIVE PIGMENFERM Ferment–Peptide Complex derived from natural fermentation in which Bacillus Subtilis grows in a specific medium including Palmitoyl tetrapeptide–20, L–Methionine, Acetyl Tyrosine to synergize with peptides produced by the bacteria in enhancing the synthesis of melanin which is the key to delay the hair greying process.

KEY ACTIVE INGREDIENTS AND THEIR FUNCTIONS

At the end of fermentation, the bacteria are filtered and lysed to obtain a concentrate rich in active ingredient such as:

- Vitamins Group B/K2/C**
- Biologically active peptides**
- Antioxidants**
- Peptides and Proteins**
- Catalase enzyme**
- Lipase enzyme**

Peptides and enzymes are titrated as total proteins and specific enzymatic activities which together with the B Group Vitamins make the Ferment–Peptide Complex particularly effective in several activities.

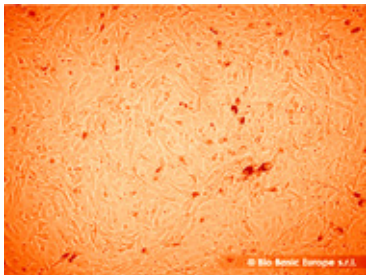


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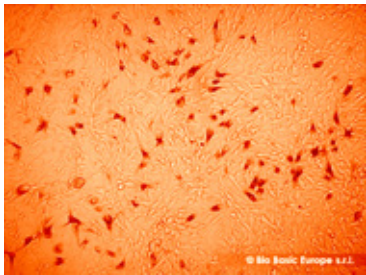


INNOVATIVE PIGMENFERM

IN VITRO EVALUATION OF THE PIGMENTING ACTION ON MELANOCYTES



NC (not treated cells)



Pigmenferm at 3%

IMPORTANT PREMISES:

Hair colour is due to the synthesis of melanin by melanocytes and its transfer to keratinocytes.

The process of hair greying is related to an increased production of Hydrogen Peroxyde in hair follicles due to a decreased catalase activity.

H₂O₂ accumulation in hair shafts associated to a reduced ability to fight against oxidative damage promote the hair greying process.

In the PIGMENFERM particularly:

Tyrosinase activity : the rate-limiting enzyme driving melanin synthesis.

Acetyl Tyrosine : a substrate for tyrosinase stimulating melanin synthesis.

BACILFERM (Bacillus Lysate Filtrate) rich in catalase acts together with L-Methionine, reducing H₂O₂ follicle accumulation which splits into water and oxygen.

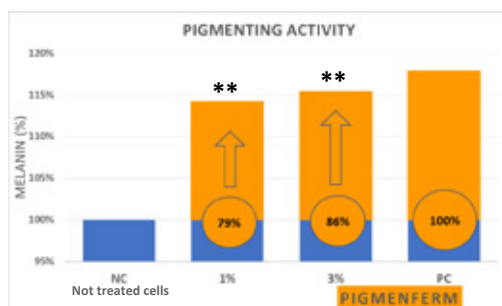
Palmitoyl tetrapeptide-20 by binding to Macrophage Scavenger Receptor 1 (MSHR1) stimulates melanogenesis and restores cells capability to produce pigment.

INNOVATIVE PIGMENFERM EFFICACY

- 1 Stimulation of melanin synthesis
- 2 Melanocyte resistance to stress
- 3 Antioxidant protection against environmental factors (pollution, blue light and UV)
- 4 Reduction of gray hair delaying its appearance
- 5 Moisturizing activity
- 6 Color uniformity
- 7 Skin luminosity

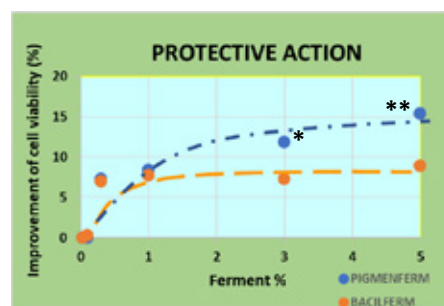
PROTECTIVE ACTION AGAINST DAMAGES INDUCED BY H₂O₂ ON MELANOCYTES

Comparative evaluation Bacilferm over Pigmenferm



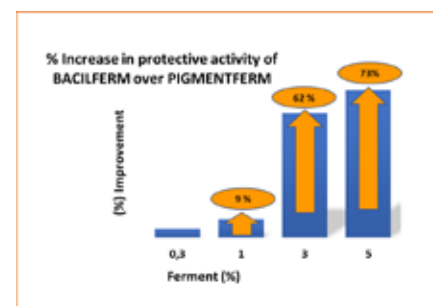
** p < 0.01 vs NC

* PC=melanotropic hormone
2µg/ml



* p < 0.05 vs H₂O₂
stimulated cells

** p < 0.01 vs H₂O₂
stimulated cells



NEW EFFICACY IN VIVO TEST COLOR UNIFORMING

An uneven complexion presents dyschromias due to a difference in the pigmentation caused by different level of melanin, the pigment responsible for the color of the skin and hair.

There can be many causes of skin dyschromias.

INNOVACTIVE PIGMENFERM is a Ferment–Peptide Complex that stimulates the synthesis of Melanin by carrying out a protective action against melanocytes, providing hydration and an antioxidant action.

The main reasons for this color anomaly are:

- sun and use of UV lamps
- chemical products
- bacteria
- physiological changes
- hormonal imbalances

PHOTOGRAPHS taken with the **OBSERV 520X**, a closed system with standardized lighting conditions and then the parameters are quantified with **Framescan Software**

A gel containing 3% Pigmenferm was applied twice a day on hemiface against placebo for 56 days.

COLOR UNIFORMING EFFICACY

UP TO +23,4%

PIGMENTING ACTION

UP TO +12%

PLACEBO -2,5%
reduction in pigmentation

An evident darkening can be observed on one side of the face where the gel with 3% Pigmenferm it has been applied.

The final objective of the study will be to verify if we can be able to reduce the visibility of the dyschromias as there has been skin hyperpigmentation.

T=0



T=56 days



T=0



T= 56 days



NEW EFFICACY IN VIVO TEST 1%

SKIN LUMINOSITY EFFICACY

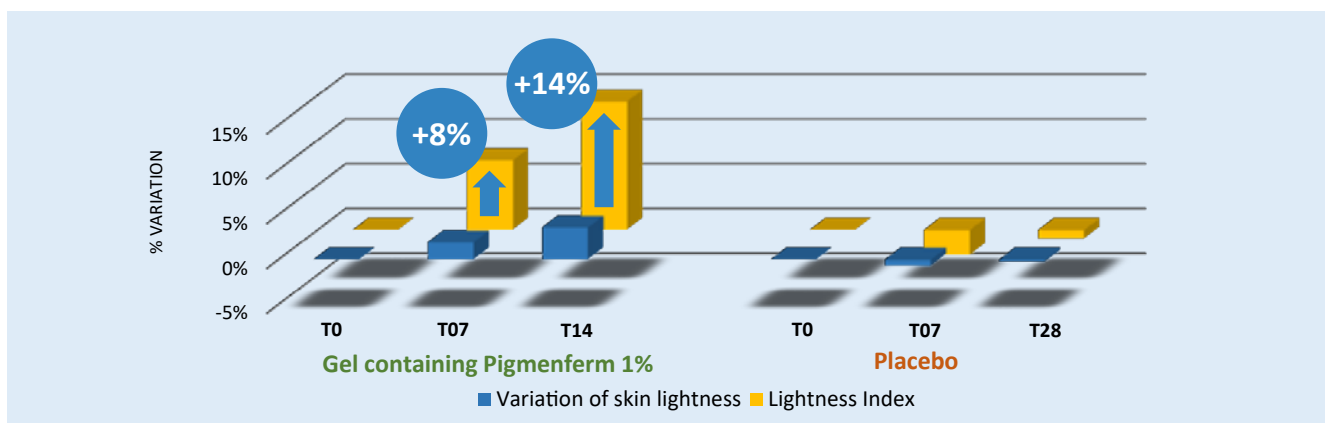
It was performed a clinical study with 10 subjects and a gel containing Pigmenferm at 1% was applied twice a day for 14 days on one side of the face and the placebo on the other one.

The effect of the product was evaluated analyzing the increase of the skin lightness (Lightness Index)* in comparison with the variation obtained from a placebo.

* Lightness Index is calculated by normalizing the detected skin lightness value respect to the maximum value assumed by the parameter in the skin (25 units) . Therefore Lightness Index is equal to 4 times the percentage change of the skin lightness parameter.

SKIN LIGHTNESS/LUMINOSITY – LIGHTNESS INDEX

Measured by Antera 3D



GEL CONTAINING PIGMENFERM 1%



T0



T07



T14

TECHNICAL PRODUCT DATA

INCI: Glycerin, Bacillus Ferment Filtrate, Palmitoyl tetrapeptide-20, L-Methionine, Acetyl-Tyrosine | **Solubility:** water soluble | **pH:** 6-8 | **Colour:** colorless-yellowish
Preservative Free | **Recommended dose:** 1-3%