



LABORATOIRES
SÉROBIOLOGIQUES

Member of **COGNIS**

PILINHIB® VEG

LS 9109

Active Ingredient for Cosmetology

Inhibitor of hair growth

Skin care

Structure and biology of a hair

- Hairs are cutaneous auxilliary parts, derived from the epidermis and present on the whole skin surface, except for some areas: palms of hands, soles, etc...
- The cutaneous surface is riddled with two to three millions of pilo-sebaceous follicles, all of them being centered by a hair (Fig. 1A).

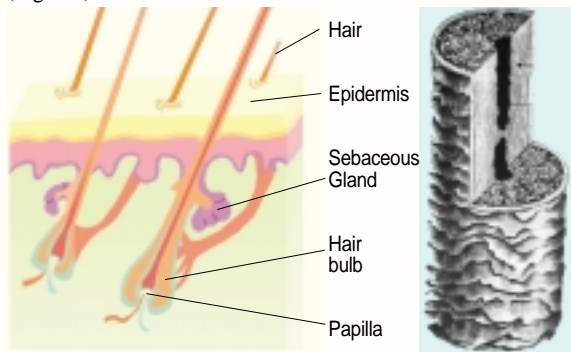


Fig. 1A – Pilo-sebaceous follicles.

Fig. 1B – Hair stem.

- A hair is made of three main parts (Fig. 1):
 - **a stem**: it is the visible part of hair,
 - **a root**: the internal part of hair, implanted in the dermis,
 - **a bulb**: deep and swollen end, is the living part of hair, it is this part which makes it grow.
- The activity of the hair follicle is cyclic and contains 3 phases: anagen phase or growth; catagen or intermediate phase and telogen or rest phase before its fall.
- In women, at the level of the face, hairs are thin, short, building the down that grants its velvet look to the skin. The down may become larger, longer and turn into unpleasant hairs. It is often the case at the level of legs or forearms.

PILINHIB® VEG LS 9109

Definition / Composition

PILINHIB® VEG LS 9109 is a complex active, of botanical and synthetic origin, slowing down the regrowth of hairs. It helps the atrophy of hairs, while having softening, refreshing and soothing activities, eliminating the drawbacks of depilation.

Main components:

- Urea - Salicylic Acid - Willow extract.
- Hamamelis, Arnica, Hypericum, Menthol; botanical peptides.
- An excipient for stabilizing and helping the penetration of actives towards the basis of the pilo-sebaceous duct.

Skin benefits

① Urea

- This element is met in many biological liquids, and is found in low concentration at the surface of the epidermis; by penetrating along the pilo-sebaceous duct, if it reaches the residual germinative cells at the bottom of the hair bulb, or the cells of the hair papilla, it will have on the latter a genuine metabolism slowing-down, inhibiting effect.
- Indeed, urea helps the denaturation of (cellular) proteins and, through it, decreases their functionality.
- The activity of the papilla and the germinative cells of the bottom of the hair bulb conditioning the growth of hairs, if PILINHIB® VEG LS 9109 reaches these areas in enough concentration and duration, it will have a genuine slowing-down role.

② Salicylic Acid - Willow extract

It is an beta-hydroxyl, aromatic acid, whose name comes from the fact that it was originally obtained from willow bark (*Salix alba*). Willow extract is a component of PILINHIB® VEG LS 9109.

In local applications, it has a slight asepticizing action, and makes easier the "dissolution" and hence the denaturation of keratins.

③ Other principles

They enable to contribute to eliminate the drawbacks linked to depilation: by reducing the localized warm-up thanks to a refreshing effect; by soothing "inflammation" and diffuse blotches (soothing effect):

- * Hamamelis = tonic, local astringent,
- * Arnica, Hypericum = local decongestive, soothing,
- * Menthol = local soothing, healing,
- * Soy (peptides) = softening, local soothing.

Cosmetic use

- After depilation care.
- Deodorant.

Directions for use and frequency

• Directions for use in two phases:

- 1st phase:
 - * depilation.
- 2nd phase:
 - * regrowth slow down with PILINHIB® VEG LS 9109, without causing any irritation,
 - * application of the product containing PILINHIB® VEG LS 9109, then make easier the penetration by a slight kneading of the treated area.

• Frequency of the treatment:

- right after each depilation,
- as a maintenance use: regular application of the product with PILINHIB® VEG LS 9109.

Dosage / Solubility / Mode of incorporation

1. Dose of use: 5%.

2. Solubility: soluble in water, insoluble in oils.

3. **Mode of incorporation:** PILINHIB® VEG LS 9109 is incorporated into the cosmetic product below 50°C, during the finishing process or at room temperature in cold processing.

Analytical characteristics

1. **Aspect:** amber-colored limpid liquid, with a characteristic odor.

2. **Specifications:** upon request.

Tolerance

Good.

Efficacy

Test summary overleaf.

Storage

In its original packaging, at 15-25°C.

INCI Name

Propylene Glycol (and) Hydrolyzed Soy Protein (and) Hypericum Perforatum Extract (and) Hamamelis Virginiana (Witch Hazel) Extract (and) Arnica Montana Flower Extract (and) Urea (and) Salix Alba (Willow) Bark Extract (and) Menthol (and) Salicylic Acid.

Manufacturer

Laboratoires Sérobiologiques S.A.

EFFICACY TEST

Anti-regrowth effect on hair (clinical study).

Aim

Demonstration of the anti-regrowth activity of a gel containing 5% of PILINHIB® VEG LS 9109 in comparison with a placebo gel, on volunteers.

Protocol (Fig. 2)

- Study carried out in double blind on 10 brown female volunteers from 18 to 50 years old, having a large pilosity on their legs.

- Twice daily randomized treatment in the morning and in the evening at the level of legs during 3 weeks with:

- a placebo gel on one side,
- a gel containing 5% PILINHIB® VEG LS 9109 on the other side.

Evaluation of the **regrowth of hairs** on the legs after both times:

- 3 weeks without treatment (D21) after a standardized mechanical shaving then,
- 3 weeks with a randomized treatment of 2 legs (D42) after the same standardized mechanical shaving.

Some standardized **macrophotographs** are taken after 2 times of 3 weeks of regrowth, with and without treatment, exactly on the same cutaneous area.

The **diameter** and the **length** of hairs are measured by **image analysis**.

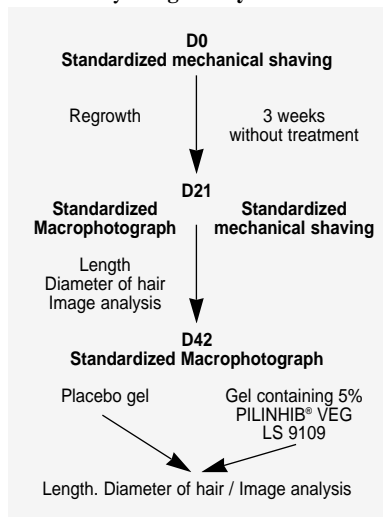


Fig. 2 – Experimental protocol as a diagram.

Conclusion

The gel with 5% PILINHIB® VEG LS 9109 has a significant anti-hair regrowth effect on legs, compared to placebo.

Results (Fig. 3 to 5)

• Visual evaluation

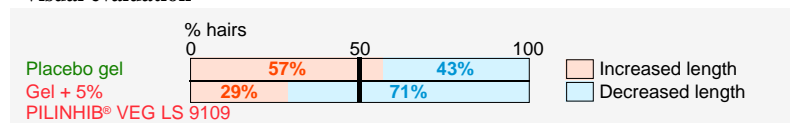


Fig. 3 – Visual evaluation on macrophotograph, of the evolution of hair length comparatively to D21 and D42.

• Standardized macrophotograph

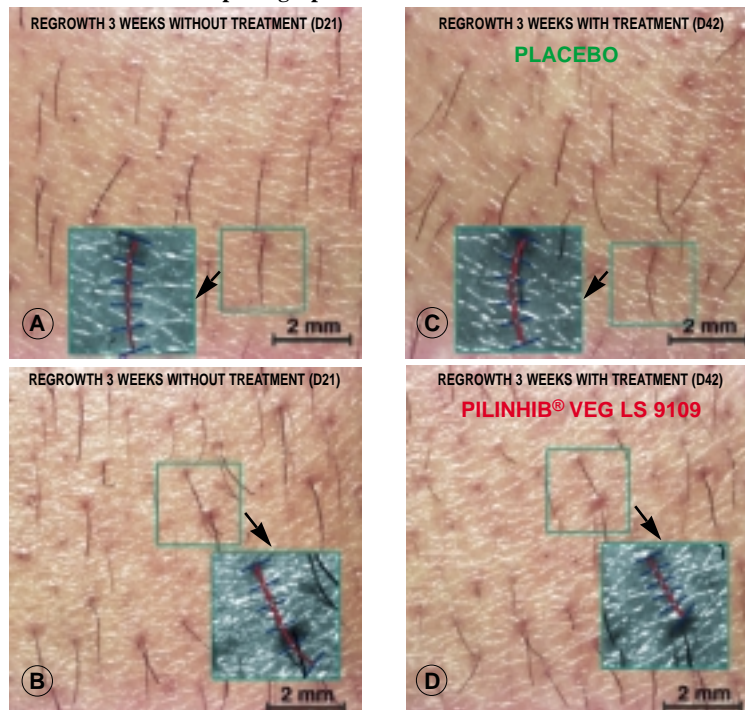


Fig. 4 – PILINHIB® VEG LS 9109: illustration of the inhibiting effect on the growth of the hairs of legs. Quantification by image analysis, 21 days after shaving:

A and B: **untreated control** areas = regrowth 21 days after shaving without treatment
 C: **placebo** area = regrowth 21 days after shaving with twice daily treatment by placebo
 D: **PILINHIB® VEG LS 9109** area = regrowth 21 days after shaving with twice daily treatment by PILINHIB® VEG LS 9109.

• Image analysis

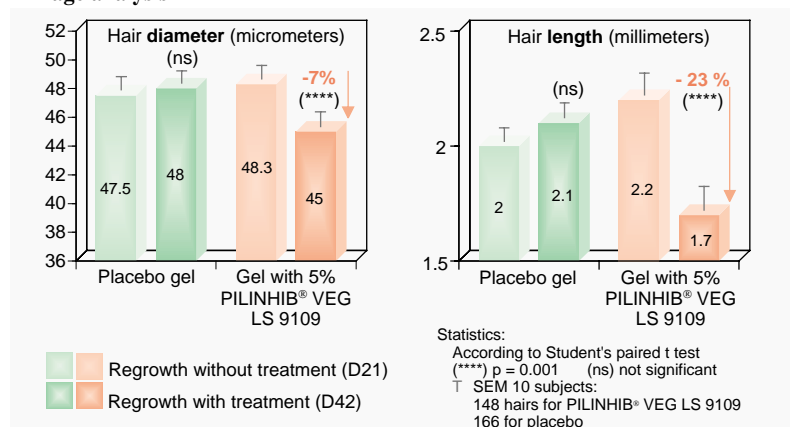


Fig. 5 – Comparison of the length (L) and the diameter (d) of hairs measured by image analysis on standardized macrophotograph at D21 and D42. Mean analysis on 30 hairs/subject.

