



# PRO-SVELTYL®

ALL THE POWER OF SACRED LOTUS FOR  
A HIGH-IMPACT ANTI-CELLULITE ACTION

A nightmare for women, cellulite is much more than just an esthetic embarrassment; thighs, hips and stomach remain the predominant storage places for accumulated fat. During changes in fat mass, the adipose tissue, abnormally swollen with water, secretes pro-inflammatory factors and MMPs. Its functions are altered, leaving a clear field for multiple metabolic complications.

Drawing the best from the *Nelumbo nucifera*, more familiarly known as Sacred Lotus, SILAB launches PRO-SVELTYL®, an ultra-powerful active ingredient, anti-cellulite and draining. PRO-SVELTYL®:

- > reduces fat storage by activating lipolysis and boosting the synthesis of SIRT-1, known to be a universal gene for caloric restriction;
- > limits adipose tissue inflammation by stimulating the expression of adiponectin;
- > preserves fibrous architecture by inhibiting the activity of adipocyte MMP-2 and MMP-9.

Its anti-inflammatory properties, its capacity to restore the homeostasis of adipose tissue and its slimming virtues make PRO-SVELTYL® the indispensable weapon against cellulite. It is recommended in all slimming body care products.

## GENERAL PRINCIPLES

PRO-SVELTYL® is obtained from the *Nelumbo nucifera*, an aquatic plant rich in flavonols. It offers a new triple action anti-cellulitis approach to block the inevitable cycle of *fat accumulation – local inflammations and water retention – degradation of the fibrous matrix*. PRO-SVELTYL® dislodges fat, reduces infiltrations in swollen zones of edema and restores the homeostasis of adipose tissue.

### PRO-SVELTYL®, a triple action anti-cellulite approach

#### ► Action 1: Fat release

- PRO-SVELTYL® activates lipolysis and favors the elimination of lipids
- PRO-SVELTYL® stimulates the expression of the caloric restriction gene, SIRT-1, thus limiting adipogenesis, the formation of new fat cells

#### ► Action 2: Reduction of infiltration

- PRO-SVELTYL® reduces tissue inflammation by boosting the synthesis of adiponectin and in this way favors drainage of cellulitis zones

#### ► Action 3: Repair

- By inhibiting the activity of MMPs, responsible for the matricial degradation, PRO-SVELTYL® limits the adipose tissue development

*Studies in vivo have demonstrated the anti-cellulitis action, the draining effect and the slenderizing properties of PRO-SVELTYL®. Tested at 4% vs. placebo, PRO-SVELTYL® significantly reduces skin surface irregularities resulting from the presence of cellulitis, drains zones of edema and reduces the circumference of the thighs, abdomen and hips. PRO-SVELTYL® is recommended in all anti-cellulitis and draining body care products because it improves the visual appearance of the skin and provides an overall thinning action.*

## TECHNICAL SHEET

- **Latin name:** *Nelumbo nucifera*
- **I.N.C.I. name:** Butylene glycol & Water & Nelumbo nucifera leaf extract
- **Cas N° :** 107-88-0 / 7732-18-5 / 85085-51-4

#### Form

- Hydroglycolic solution (Water/Butylene glycol - 50/40)
- Aspect: limpid liquid
- Odor: characteristic
- Color: amber

#### Analytical features

- Dry matter: 5 - 12 g/l
- Total polyphenols (expressed in gallic acid): 0.4 - 0.8 g/l
- pH: 4.0 - 5.0
- Preservative: 0.50% phenoxyethanol  
0.50% ethylhexylglycerin

#### Bacteriology

- Sterile product
- No yeast and mould present
- No pathogenic germs present

#### Packaging

Sterile 1L and/or 5 L plastic container

#### Storage

Store preferably at +20°C in a dark place

#### Use

- Fully soluble in aqueous medium
- Solubility in ethanol: soluble up to 60/40 ethanol/water (v/v)
- Can withstand temperatures up to 80°C for at least two hours
- Stable at pH between 2 and 7
- Recommended amount: 1 to 4%

#### Innocuousness

- ✓ Determination of irritant potential on caucasian skin: Non irritant
- ✓ No mutagenicity according to Ames' test
- ✓ Non phototoxic
- ✓ Non cytotoxic
- ✓ Evaluation of sensitizing capacity





**COSMETIC EFFICACY**

**IN VITRO STUDIES**

**Effect on fat storage** (lipolytic activity of fat cells and fat cell differentiation)

• Assay of non-esterified fatty acids in differentiated pre-adipocytes by colorimetry  
 The aim of this study was to determine the effect of PRO-SVELTYL® on lipolytic activity. Tested at 1%, PRO-SVELTYL® favors the hydrolysis of triglycerides and significantly increases the lipolytic activity of adipocytes by 1513%. This effect is dose-dependant.

• Western blot study on pre-adipocytes during differentiation  
 The aim of this study was to assess the action of PRO-SVELTYL® on SIRT-1, the caloric restriction gene that inhibits fat cell differentiation. Tested at 0.5%, PRO-SVELTYL® stimulates the adipocyte expression of SIRT-1 by 22%.

**Effect on adipose tissue inflammation** (synthesis of adiponectin)

Western blot study on pre-adipocytes during differentiation  
 The aim of this study was to evaluate the anti-inflammatory properties of PRO-SVELTYL®. Tested at 0.5%, PRO-SVELTYL® significantly stimulates the synthesis of adiponectin, an anti-inflammatory molecule, by 33%. This effect is dose-dependant.

**Effect on the fibrous matrix of adipose tissue**

Study conducted by zymography on cultures of pre-adipocytes during differentiation  
 The aim of this study was to determine the capacity of PRO-SVELTYL® to inhibit the activity of fat cell MMP-2 and MMP-9, responsible for degradation of the ECM. Tested at 1%, PRO-SVELTYL® tends to reduce MMP-2 activity and significantly reduces MMP-9 activity by 73%. These effects are dose-dependant.

**IN VIVO STUDIES**

All studies *in vivo* were conducted on volunteers with visible cellulitis on the thighs and whose body mass index was included between 21 and 26

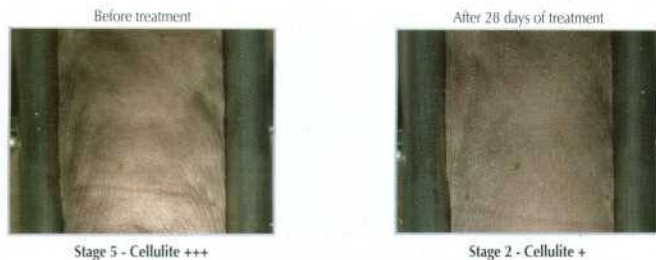
**Treatment with PRO-SVELTYL® formulated at 4% in an emulsion and tested vs. placebo**

**Anti-cellulitis action of PRO-SVELTYL®**

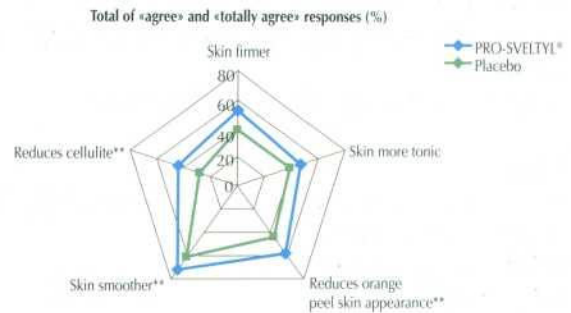
Studies conducted on 23 healthy female volunteers (mean age: 43 ± 11 years)

The anti-cellulitis action of PRO-SVELTYL® was analyzed using a photographic scale, by subjective evaluation and clinical scoring. In the conditions of the studies, after 28 days of twice-daily treatment, PRO-SVELTYL® significantly reduces irregularities of the skin surface resulting from cellulitis (-19%, P=0.0041). This effect was observed in 68% of the volunteers.

► **Photographic scale**



► **Subjective evaluation**



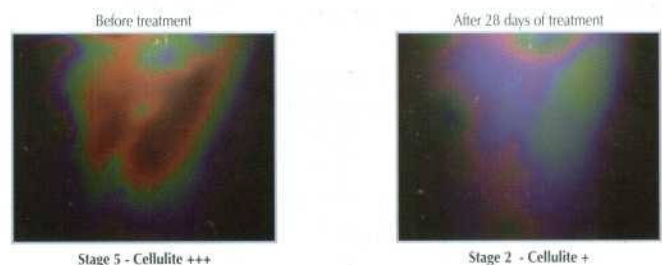
► **Clinical scoring**

These results were confirmed by clinical scoring done by a trained evaluator (severity of the cellulitis-visual appearance: -6% P=0.0325).

**Draining effect of PRO-SVELTYL®**

Study conducted on 20 healthy female volunteers (mean age: 43 ± 11 years)

The draining effect of PRO-SVELTYL® was measured by contact thermography on the thighs. In the conditions of the study, after 28 days of twice-daily treatment, PRO-SVELTYL® significantly improves heat exchanges by 29% (P=0.0029) and enabled 74 of the volunteers to pass to a lower thermographic stage.



**Thinning action of PRO-SVELTYL®**

The thinning effect of PRO-SVELTYL® was evaluated by measuring thigh circumference after 28 days of twice-daily treatment and after 56 days of twice-daily treatment for the hips and abdomen

In the conditions of the studies and in the absence of weight loss by the volunteers, PRO-SVELTYL® significantly reduces:

\*\* : Significant differences according to Student's test (P<0.10)



# Engineering natural active ingredients



**PRO-SVELTYL®**

Rich in *Nelumbo nucifera* flavonols

**Reduces fat storage**

- Activates lipolysis
- Reduces adipocyte differentiation (increase in SIRT-1)

**Limits tissue inflammation**

- Stimulates adiponectin synthesis

**Preserves fibrous architecture**

- Inhibits adipocyte MMP-2 and MMP-9 activities

**ANTICELLULITE EFFECT / DRAINING EFFET**