



Care  
Creations™

Slim-Excess™  
The body designer

**Beauty Creations**  
*The Passion for Beauty*

 **BASF**

The Chemical Company

# What's new in the field of slimming ingredients?

## Spermine and spermidine, new “slimming” targets, inspired by research conducted on obesity

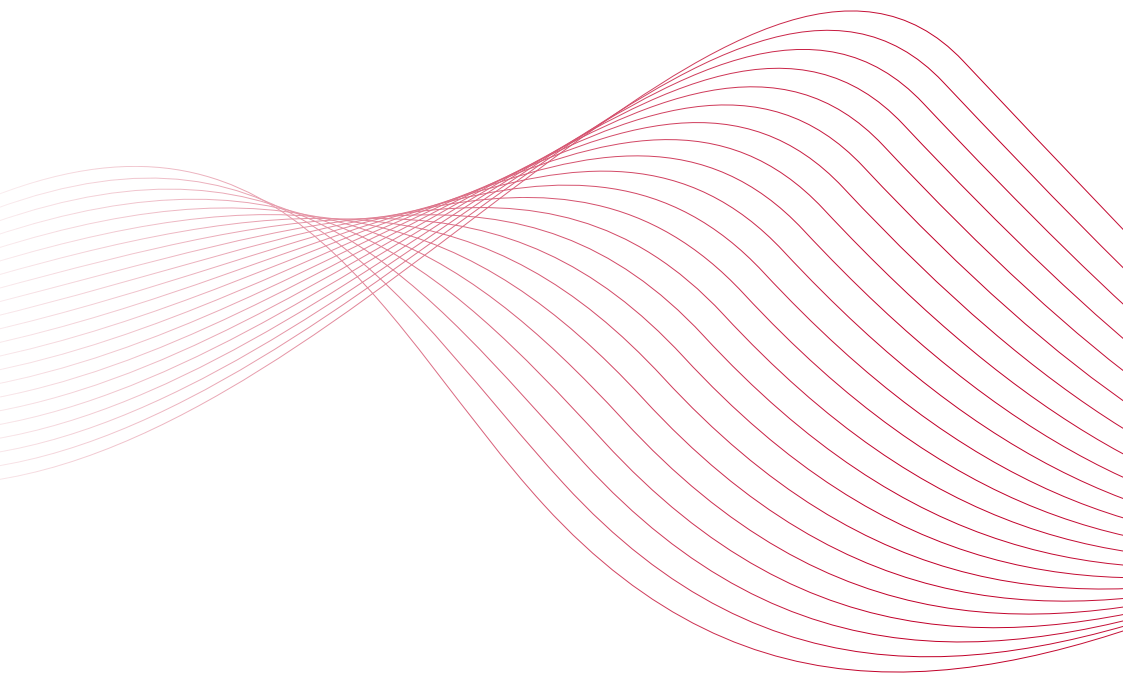
Today, the major challenge facing the body contouring and slimming sector is clearly the level of effectiveness of the ingredients used. The consumer expectations are increasingly closer to those obtained by plastic surgery, which is also the case in the anti-age sector. Liposuction in a jar is right around the corner!

Scientifically speaking, caffeine is the ‘star’ ingredient, it stimulates lipolysis through the inhibition of phosphodiesterase. In spite of the level of innovation in this field, the effectiveness of caffeine remains unrivalled.

Our goal was to develop an active ingredient that was more effective than caffeine. For this, we drew our inspiration from the research conducted on obesity<sup>(1)</sup>, where scientists have found an abnormally high intracellular level of 2 polyamines in obese subjects: spermine and spermidine.

These two molecules show a very wide spectrum of action on lipid metabolism: they stimulate lipogenesis, inhibit lipolysis (via an insulin-like effect) and activate pre-adipocyte differentiation.

**An ingredient that is capable of hindering the activity of spermine and spermidine could offer powerful lipo-reducing action.**



# Slim-Excess™

An innovation by Beauty Creations

In order to effectively block the activity of polyamines, we decided to develop a genuine and innovative molecular 'trap'. The principle behind this 'trap' is to present structural complementarity that is highly specific to spermine and spermidine, in order to offer optimal blocking effectiveness.

Using computer aided molecular design, we determined the conformation of the molecule that is best adapted to that of the polyamines.

This study showed us that the optimal trapping system would be one with a disaccharide. The sulfo-carrabioses meet these criteria and present a nearly perfect three dimensional complementarity with spermidine. A spermine and/or spermidine molecule was trapped by 3 disaccharidic molecules.

**We proved that lipogenesis was inhibited and lipolysis was activated.**

**The clinical study in which Slim-Excess™ 3% was applied twice a day showed that after 2 weeks of product use, there is a visible decrease in cellulite.**

**Slim-Excess™ 3% effectively brought a greater loss in centimeters around the thigh than that with caffeine\*\*, after only 4 weeks of product application.**

## Properties

Lipogenesis inhibitor,  
Lipolysis activator.

## Origin

Slim-Excess™ is a red seaweed hydrolyzate.

## Skincare

Daily body contouring treatment,  
Anti-cellulite body contouring treatment (thighs, abdomen, hips),  
Slimming serum express (4 weeks).

\* results observed *in vivo* on the comparison of a loss of centimeters after 4 weeks of product application.

\*\* results observed intergroup

(1) Jamdar S *et al*, 1996

# Slim-Excess™

1 active ingredient,  
3 slimming actions

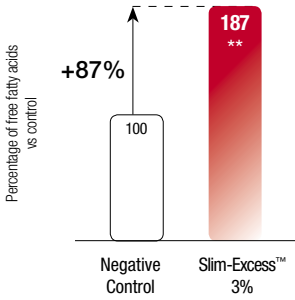
What role do the spermine and spermidine polyamines play inside the adipocyte?

- 1 They trigger lipogenesis by activating Lipoprotein Lipase, (which promotes the absorption of fatty acids in the adipocyte), by stimulating the enzymes involved in the triglyceride production process, and by activating the transportation process of glucose into the adipocyte (insulin-like effect)
- 2 They inhibit lipolysis by activating phosphodiesterase
- 3 They stimulate adipocyte differentiation

Blocking the polyamines leads to

- 1 the inhibition of lipogenesis
- 2 the activation of lipolysis
- 3 the inhibition of adipocyte differentiation

## 87% lipolysis activation

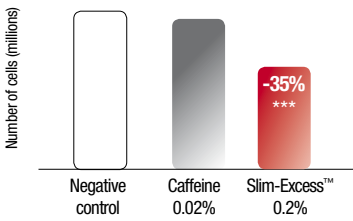


\*\* ( $p < 0.01$ ) vs negative control

### Tested *in vitro*

Tested on a culture of adipocytes taken from an abdominal biopsy. Measurements of the release of free fatty acids, using the NEFA-C kit. Slim-Excess™ 3% versus an untreated control.

## 35% adipocyte proliferation inhibition



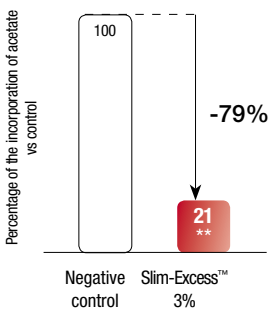
Greater inhibition than that with caffeine alone

\*\*\* ( $p < 0.001$ ) vs negative control

### Tested *in vitro*

Tested on a culture of pre-adipocytes taken from liposuction. Cells were counted after 7 days in a culture, using optical microscopy on Mallassez cells. Slim-Excess™ 0.2% (0.0004% to 0.002% of sulfo-carrabioses) versus caffeine 0.02% (1 mM), versus untreated control.

## 79% lipogenesis inhibition



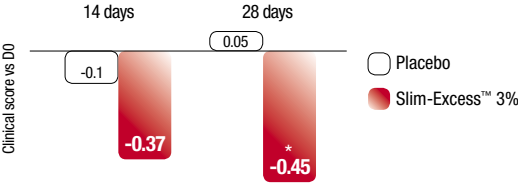
\*\* ( $p < 0.01$ ) vs negative control

### Tested *in vitro*

Tested on a culture of adipocytes taken from an abdominal biopsy. Measurements of the incorporation of radioactive labeled acetate were taken using liquid scintillation. Slim-Excess™ 3% versus an untreated control.



## Helps to reduce cellulite from 2 weeks

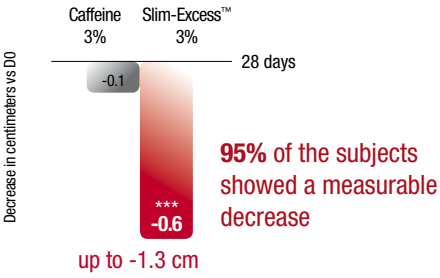


\* (p<0.05) vs placebo

## Slims down the thighs in 4 weeks

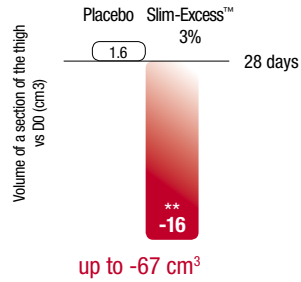
### Used alone

A greater decrease in centimeters than that showed with caffeine alone



\*\*\* (p<0.001) vs caffeine 3%  
Measurements intergroup

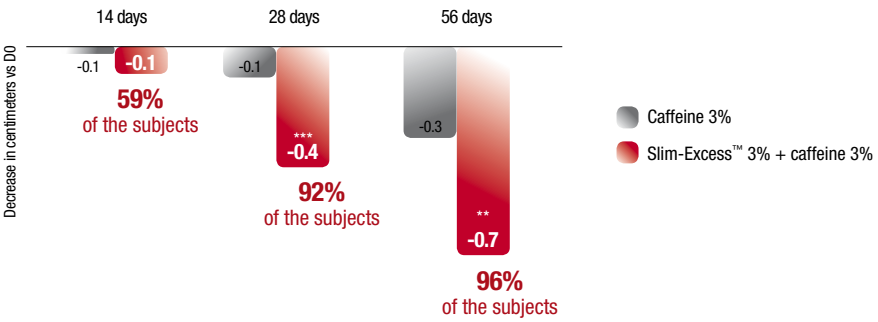
68% of the volunteers showed a decrease in volume in their thighs



\*\* (p<0.01) vs placebo

### Combined with caffeine

The results were multiplied by 4, when combined with caffeine<sup>1</sup>



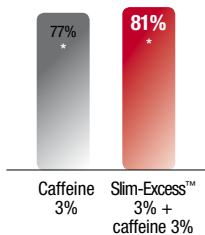
\*\*\* (p<0.001) vs caffeine 3%  
\*\* (p<0.01) vs caffeine 3%

<sup>(1)</sup> Results observed after 4 weeks on centimeter decrease

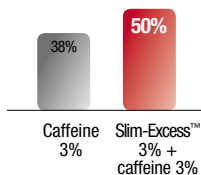
# What are the consumer benefits?

## Within 1 month

81% of the panelists feel that their skin is firmer



50% of the panelists feel that their curves are firmer



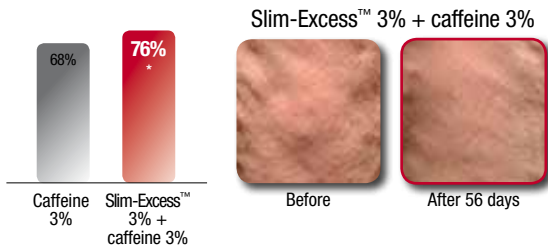
\* number of positive answers (p<0.05)

### Clinical study

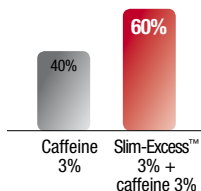
Test conducted on 2 groups of 25 volunteers, ages 21 to 49, who were recruited based on excess body weight (Body Mass Index) and cellulite. The tested products were applied to the volunteers' thighs twice a day, over an 8 week period. 1 group applied Slim-Excess™ 3% in a hydro-alcoholic gel versus placebo. 1 group applied Slim-Excess™ 3% + caffeine 3% versus caffeine 3%. Measurements in centimeters were taken around the thighs on D0, D14, D28 and D56. Clinical evaluation of the cellulite. Evaluation of the volume of the thighs, using fringe projection. Self-evaluation questionnaire.

## After 2 months

76% of the panelists note that their cellulite has visibly diminished



60% of the panelists find their figures reshaped



\* number of positive answers (p<0.05)

## Summary file

REF A00073

### DESCRIPTION

Sulfo-carrabioses solution.

### REGULATORY DATA

INCI Water, Butylene Glycol, Pentylene Glycol, Sodium Chloride, Hydrolyzed Rhodophyceae Extract, Xanthan Gum.

Japanese Cosmetic Denomination Mizu (1370), BG (100040), Penchiren Gurikoru (532168), Enka Na (1105), Pending, Kisantangamu (109058).

CAS# 7732-18-5, 107-88-0, 5343-92-0, 7647-14-5, 157524-58-8, 11138-66-2.

EINECS# 231-791-2, 203-529-7, 226-285-3, 231-598-3, ND, 234-394-2.

### PRESERVATIVES

None

### PRELIMINARY SPECIFICATIONS

Dry weight (15 hours, 105°C) 1.0 - 5.0

Total Inorganic Matter Content (15 hours, 600°C) 0 - 2.0

Carrabiose-sulfo Content -dp 2 0.2 - 1.0

Appearance Clear liquid to Opalescent

Color Yellow

Odor Characteristic

pH (Direct) 3.0 - 5.0

Refractive Index (20°C) 1.35 - 1.37

Aerobic bacteria (30°C) < or = 100/g

Pathogens : (S. Aureus; E. Coli; P.Aeruginosa; C.Albicans; A.Niger) None

### FORMULATION DATA

Concentration of use

1 to 3%

### Incorporation method

Add at the end of the formula at room temperature using planetary agitation.

### PATENT

BONNET I, GODARD N, PERRIER E.

Slimming composition.

Patent pending.

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