

# Webinar

## MORPHOLYSS™

Discover our new body anti-aging ingredient extracted from a superfruit to restore and maintain a slimmer body shape despite aging.

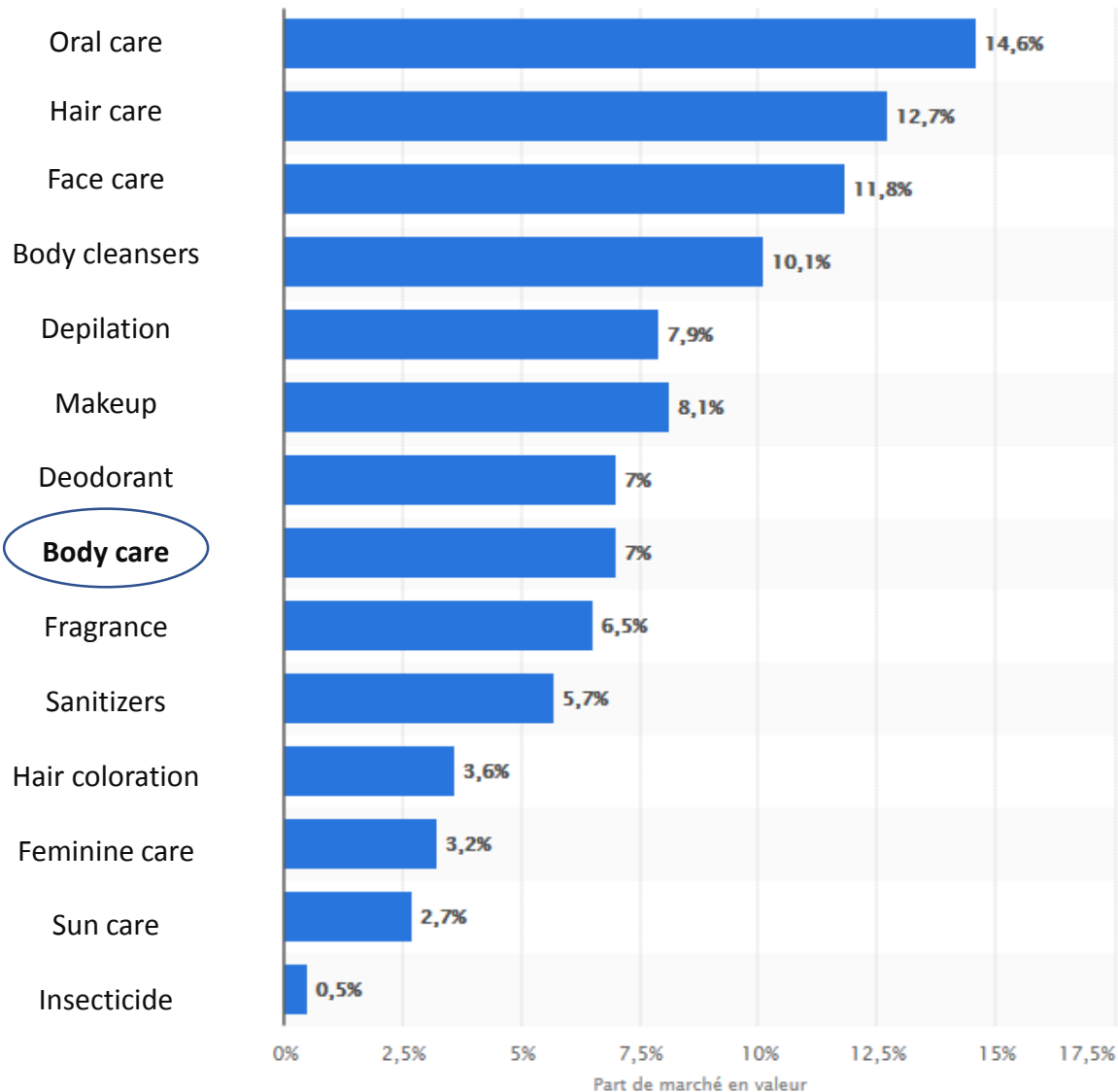
**Tuesday, November 6th**  
**2:30 pm CET**  
(Central European Time)



**Speaker: Morgane Barbier**  
Product Manager Active Ingredients



# COSMETIC MARKET IN EUROPE

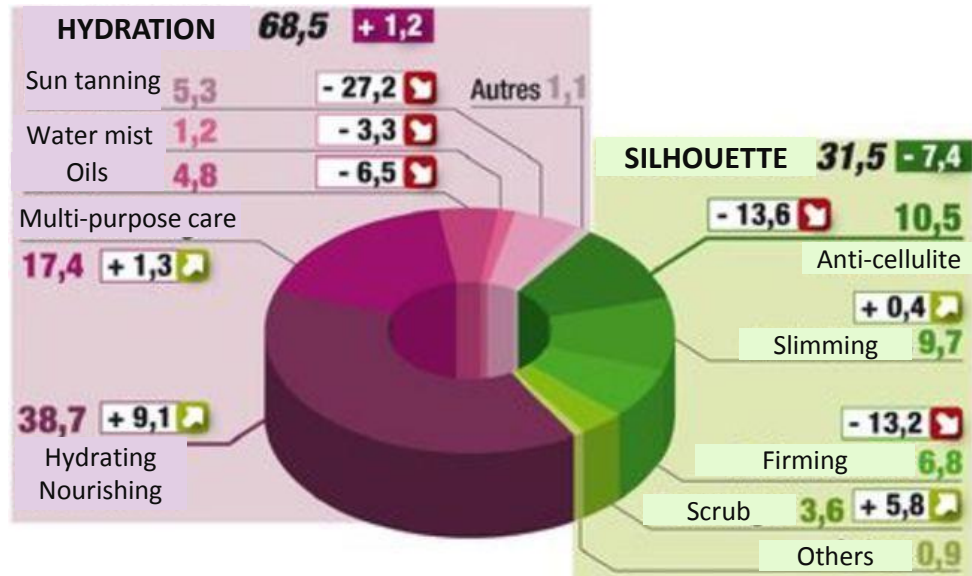


- Body care represents 7% of the cosmetic market in Europe

Market share distribution in value of cosmetic industry in Europe in 2014/2015, by category of products

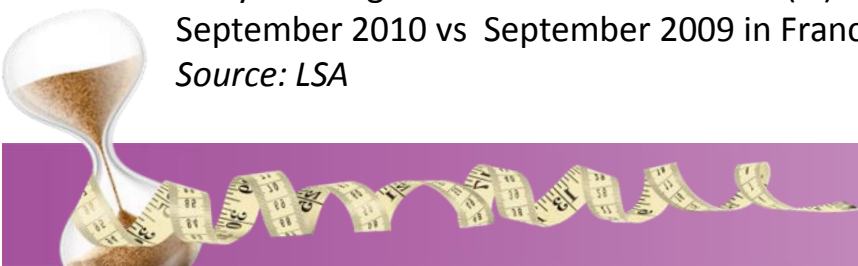
Source: Statista

# BODY CARE MARKET



- Body silhouette category decrease: -7.4%
- Best sales: anti-cellulite, slimming & firming

Body care segment distribution in value (%)  
September 2010 vs September 2009 in France  
Source: LSA



# SILHOUETTE CARE MARKET

## Trends observed in 2018

- Naturality
- Sensoriality
- Multi-purpose: slimming but in the same time:
  - Hydrating
  - Firming
  - Anti-aging
  - Anti-stretch marks...

➔ Multi-action allow to justify the purchase of a technical product with a high price especially in selective market

*Source: L'Observatoire des Cosmétiques*



# SILHOUETTE CARE MARKET



**Linéance**  
Anti-cellulite  
2-in-1: slimming & firming



**Nivea**  
Body oil  
4 actions: firming+anti-strechmarks+ skintone eveness+nutrition



**Phytomer**  
ResurfaSlim  
2-in-1: peeling+slimming



**Yves Rocher**  
Anti-Cellulite Daily Moisturizer



**Somatoline**  
Natural Slimming Gel  
95% natural origin ingredients



**Linéance**  
Natura Slim  
98% natural origin ingredients



**Clarins**  
Body Fit  
Anti-cellulite  
Smoothes, firms, lifts



**Filorga**  
Nutri-Modeling  
3-in-1 action: cellulite-stubborn bulges-sagging

Multi-action claims

Naturality claims

Body contouring target





# Webinar

## MORPHOLYSS™

Discover our new body anti-aging ingredient extracted from a superfruit to restore and maintain a slimmer body shape despite aging.

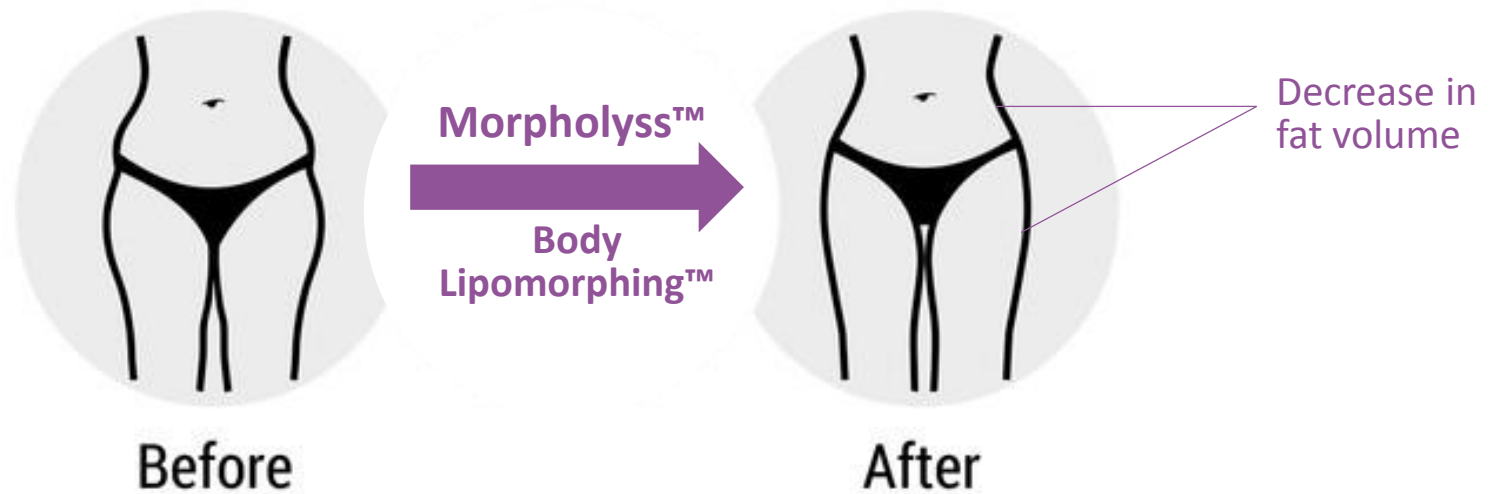
**Tuesday, November 6th**  
**2:30 pm CET**  
(Central European Time)



**Speaker: Morgane Barbier**  
Product Manager Active Ingredients



# WHAT IS LIPOMORPHING™?

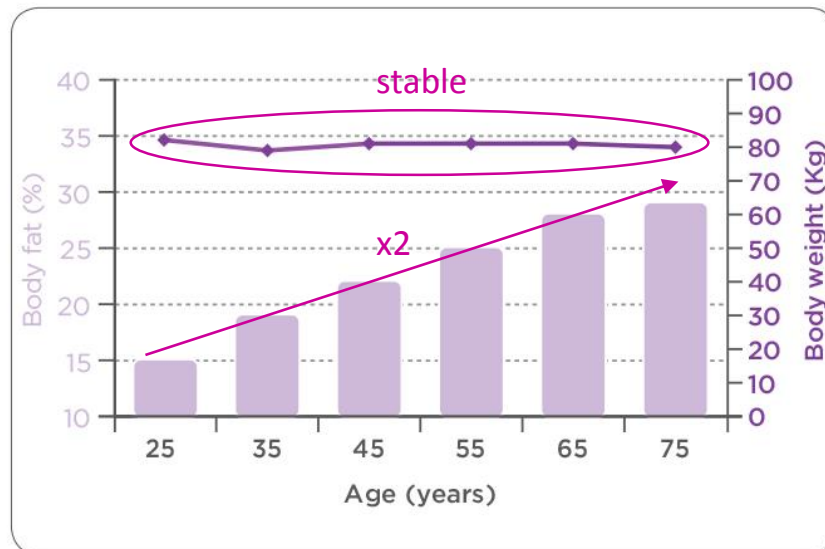


# SIGNS OF AGING... ALSO FOR BODY

## PHYSIOLOGICAL MODIFICATIONS LINKED TO AGE

- ⇒ **Face:** wrinkles, loss of firmness, spots, loss of fatty mass...
- ⇒ **Body:** Expansion of fatty mass and modification of fat repartition due to a decrease in metabolism and difficulty to burn calories  
Between 25 and 75 years old, the fat part in body increases from 15 to 30%

IMPACT OF AGE ON BODY FAT AND WEIGHT



Increase in fatty mass  
due to the aging  
= new sign of body aging



Non homogeneous repartition  
(love handles, saddlebags...)





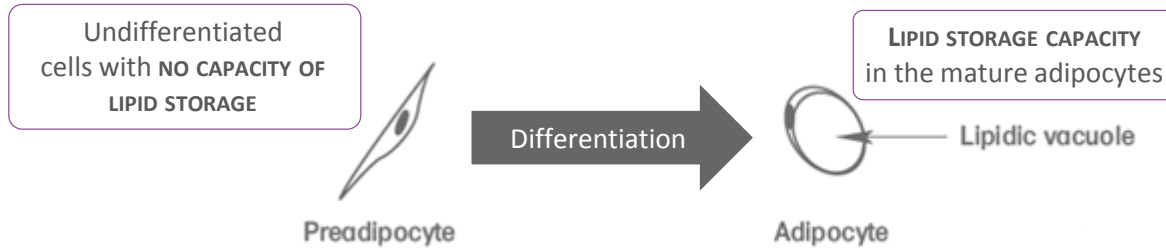
# ADIPOSE TISSUE SCIENCE

- Also called hypodermis

- **Composition:**

- **PREADIPOCYTES AND MATURE ADIPOCYTES**

- 15 to 20% of total weight



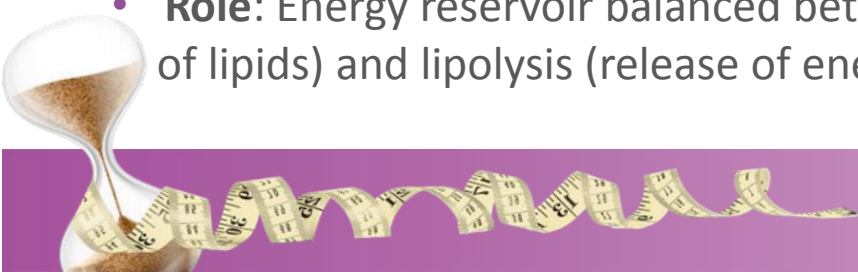
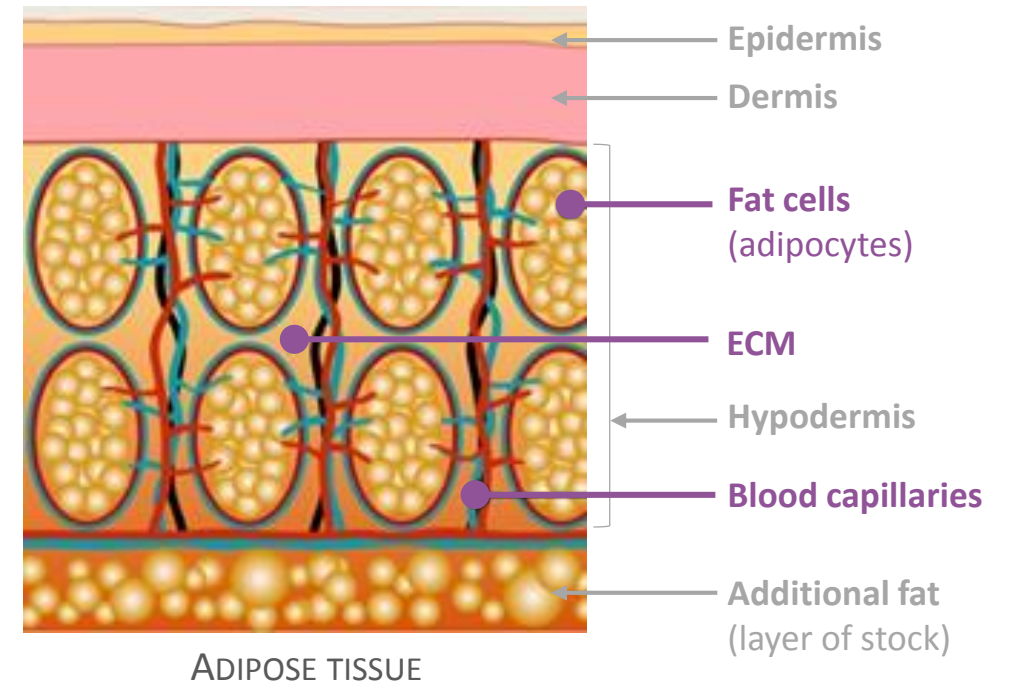
- **VASCULARIZED SYSTEM**

- Blood capillaries providing nutrients and oxygen to adipocytes

- **EXTRACELLULAR MATRIX (ECM)**

- ECM = proteins + proteoglycans + glycoproteins : Dense matrix to maintain the structure of hypodermis

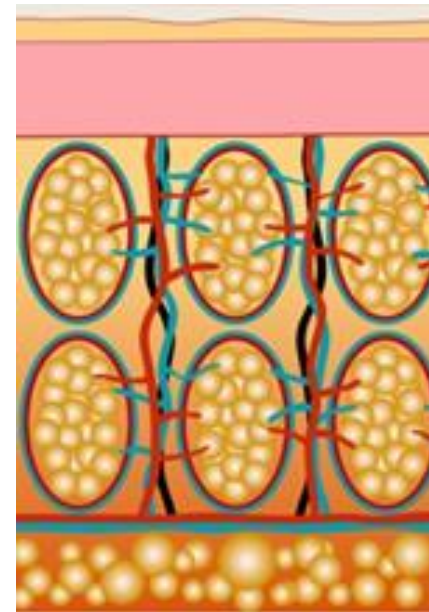
- **Role:** Energy reservoir balanced between lipogenesis (storage of lipids) and lipolysis (release of energy)



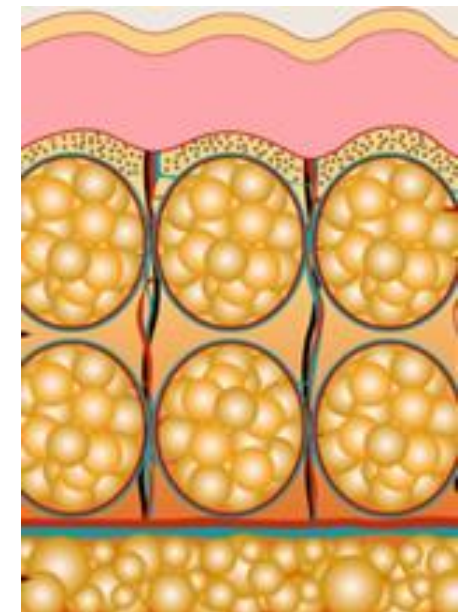
# OUR TARGET: ADIPOSE TISSUE GROWTH

## 3 KEY STEPS

- I Adipocyte size increase (hypertrophy) and adipocyte number increase (hyperplasia)  
→ higher lipid accumulation capacity
- II Stimulation of angiogenesis to nourish the tissue
- III ECM disorganization to accommodate adipocyte and vasculature growth



HEALTHY ADIPOSE TISSUE



ADIPOSE TISSUE GROWTH



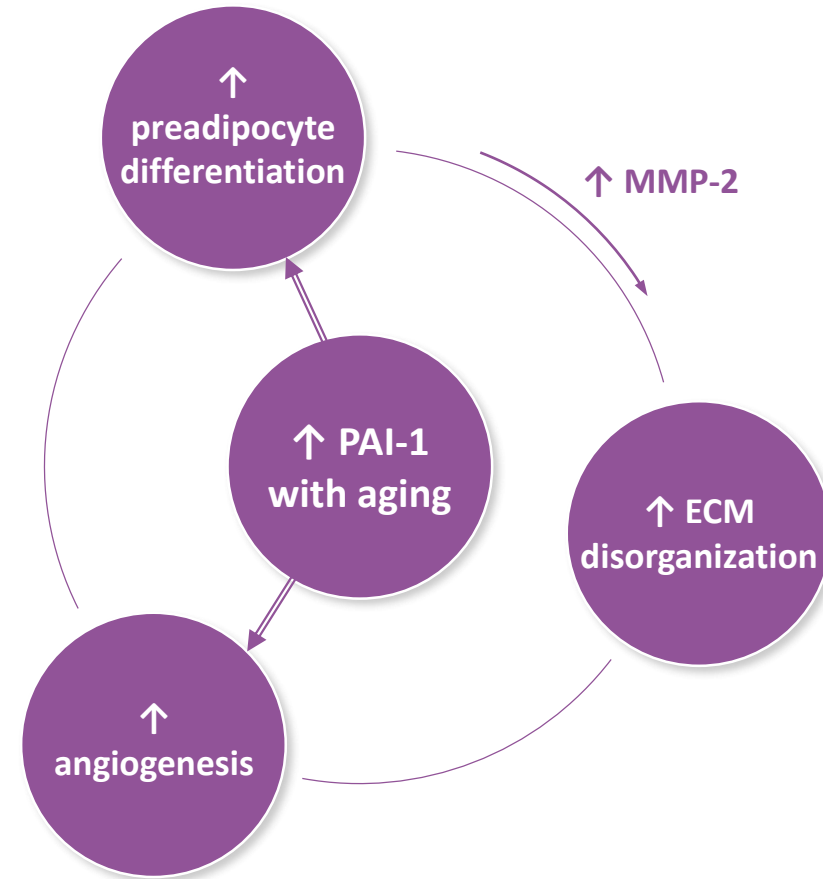
# OUR STRATEGY: PAI-1, AN UNTAPPED MARKER

## PAI-1 (Plasminogen Activator Inhibitor-1)

- Protein synthesized by adipose tissue and at the heart of adipose tissue growth
- Induction signal of preadipocyte differentiation
- Pro-angiogenic factor
- Increase in PAI-1 expression with aging: involved in fat mass increase linked to aging  
⇒ involved in Lipo-aging™

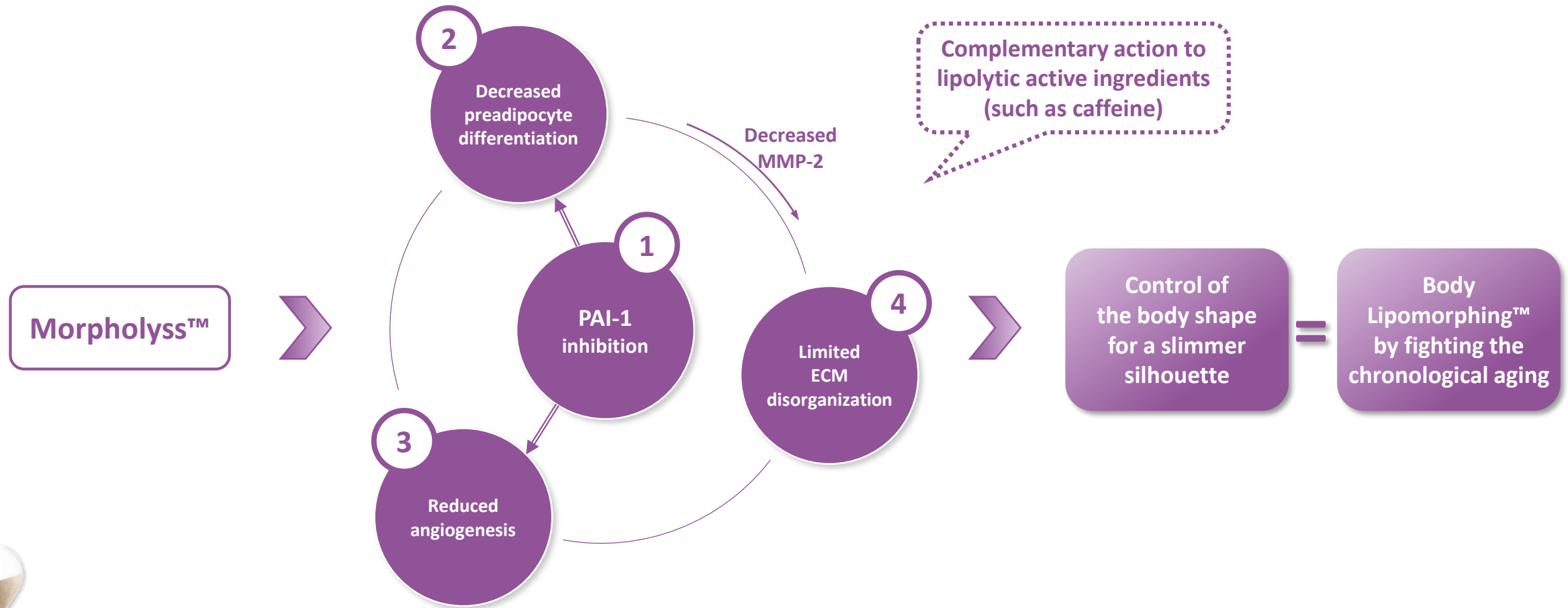
## Targeted applications

- Slimming
- Preventing
- Anti-recurrence



# ADIPOSE TISSUE CONTROL LEADING BY PAI-1 INHIBITION

## MECHANISM OF ACTION OF MORPHOLYSS™



# MORPHOLYSS™, A UNIQUE CONCEPT

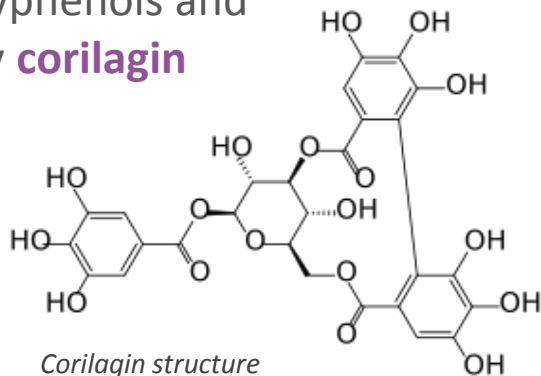
## A FRUIT-BASED INGREDIENT



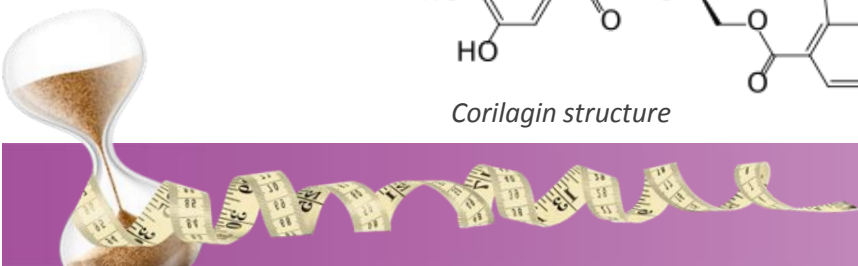
- Longan fruit is the **next superfruit!**
  - Commonly referred to in China as *long yan* (dragon's eye)
  - Fruit of *Nephelium longana*, a tropical tree native to China
  - Same family as the lychee
  - Also called 'euphoria fruit', rich in Vit C, Vit B, Fe, Mg, K, P
  - Traditionally used as a tonic for the heart, to relieve stress, to provide radiance to the skin and for its anti-inflammatory properties



- Rich in polyphenols and particularly **corilagin**



INCI: Glycerin (and) Water (and) Nephelium Longana Seed Extract





# IN VITRO STUDIES

## 1 PAI-1 INHIBITION

- Decrease in PAI-1 gene expression

## 2 DECREASED PREADIPOCYTE DIFFERENTIATION

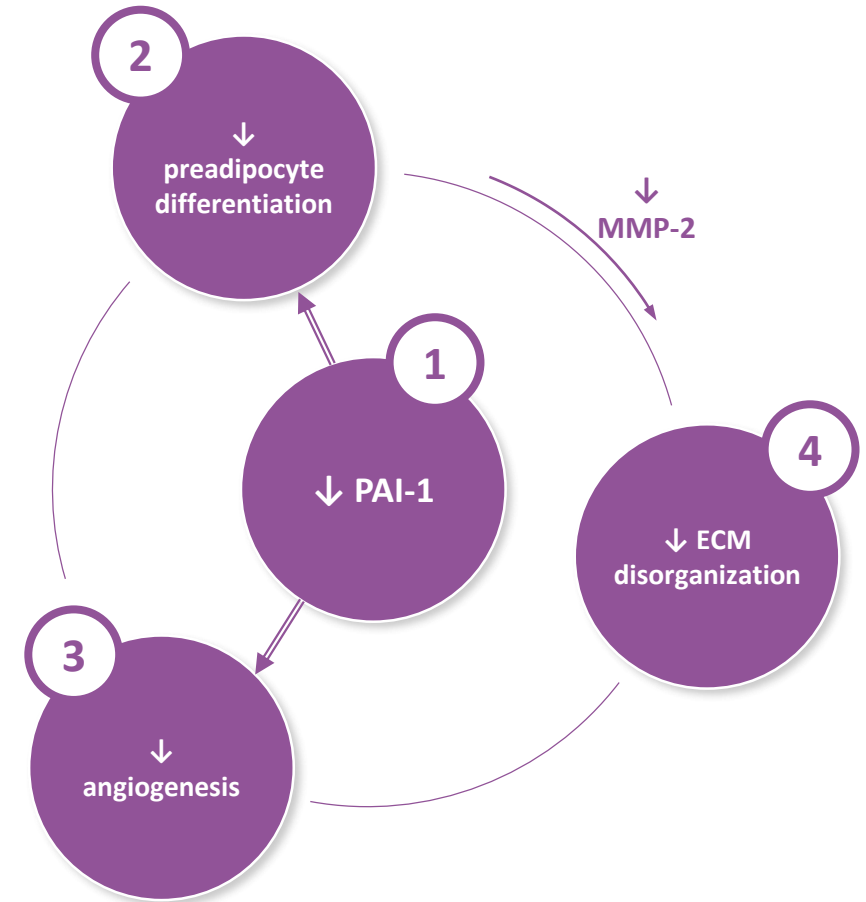
- Increase in Pref-1 gene expression
- Decrease in SREPB1c, aP2 and PPAR $\gamma$  gene expression
- Decrease in lipid storage

## 3 REDUCED ANGIOGENESIS

- Reduction of neovascularization

## 4 LIMITED ECM DISORGANIZATION

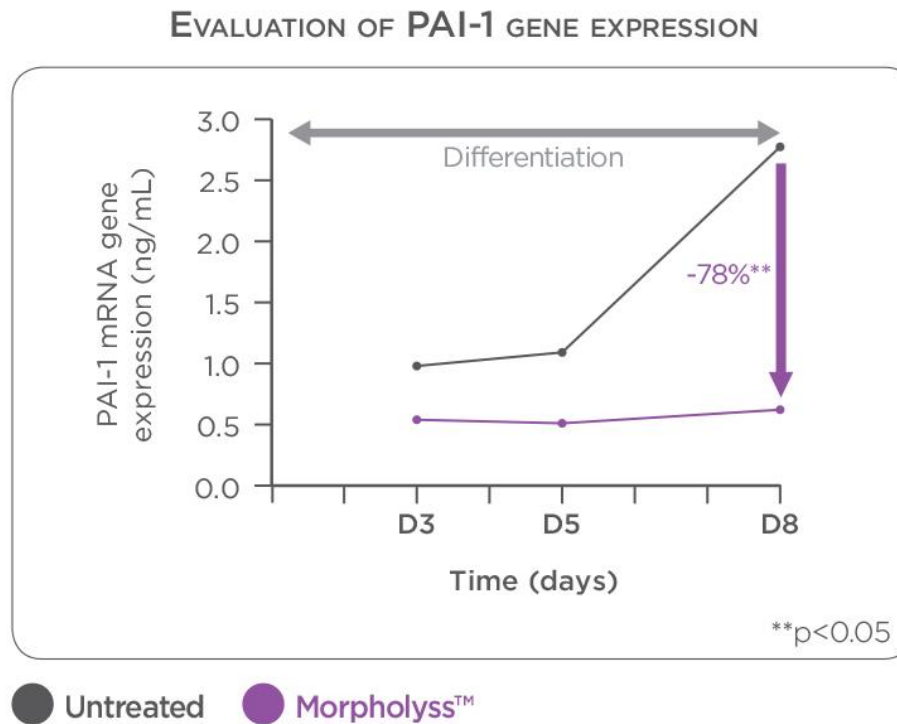
- Decrease in MMP-2 synthesis



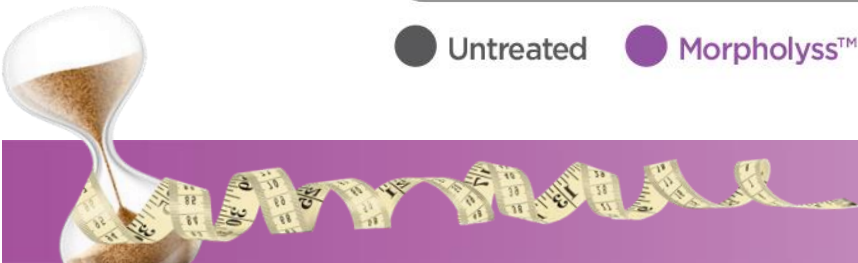
# PAI-1 INHIBITION

## *In vitro* protocol

- Culture of primary human preadipocytes (isolated from adipose tissue of a 38 years-old healthy woman) in a differentiation medium
- Addition of 0.2% of Morpholyss™
- At D3, D5 and D8, analysis of PAI-1 gene expression by RNA quantification

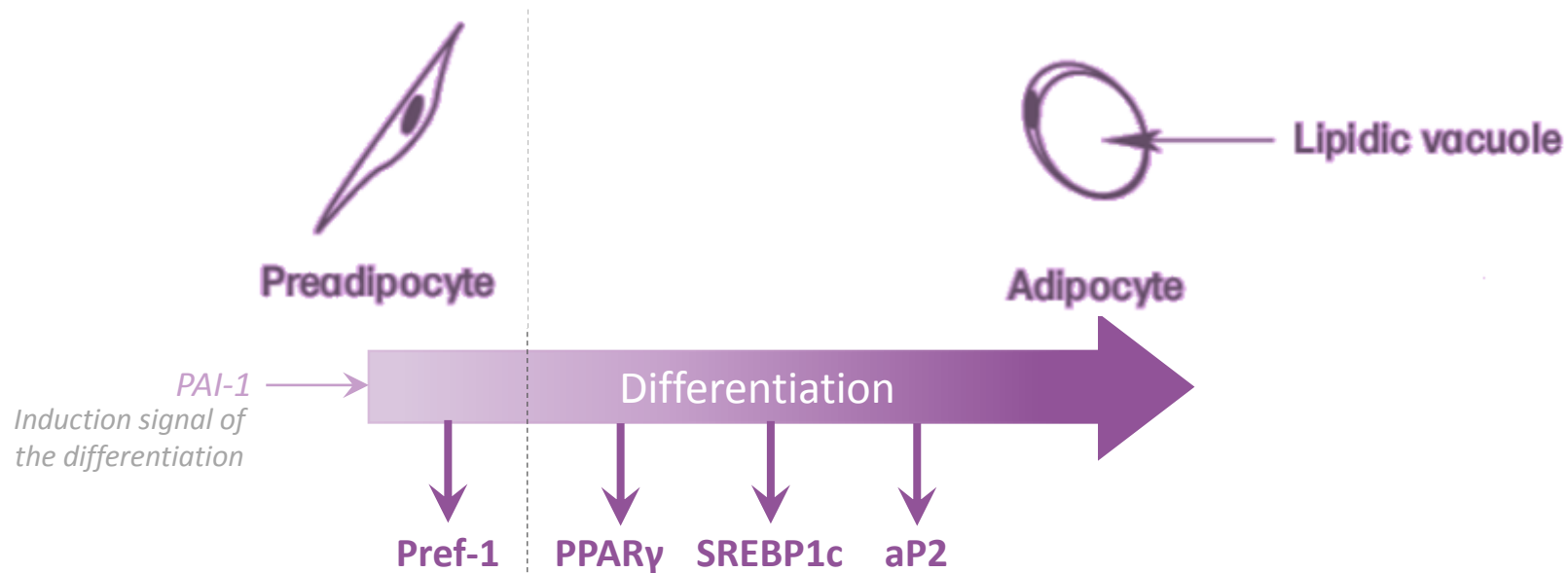


**Morpholyss™ decreases PAI-1 expression leading to a global action on adipose tissue**



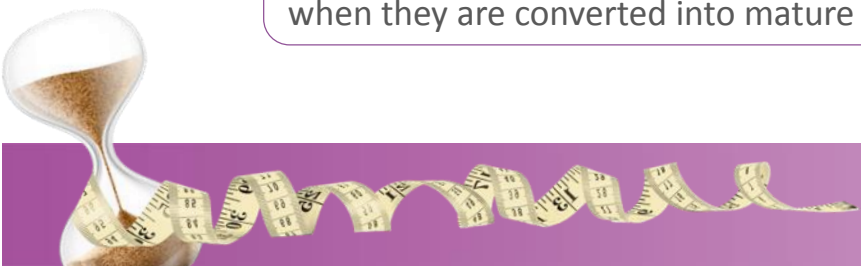
# ADIPOGENESIS – PROCESS OF CELL DIFFERENTIATION

- Process by which preadipocytes become adipocytes and during which several proteins are released and can be considered as specific markers of the process



**Pref-1** (Preadipocyte factor): transmembranal protein **specific to preadipocytes** which disappears when they are converted into mature adipocytes.

**PPAR $\gamma$**  (Peroxisome Proliferator Activated Receptor), **SREBP1c** (Sterol Regulatory Element Binding Protein) and **aP2** (adipocyte Protein): **released at different stages of the differentiation.**

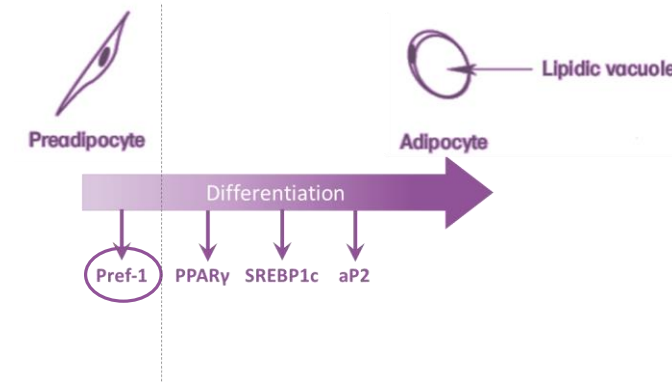
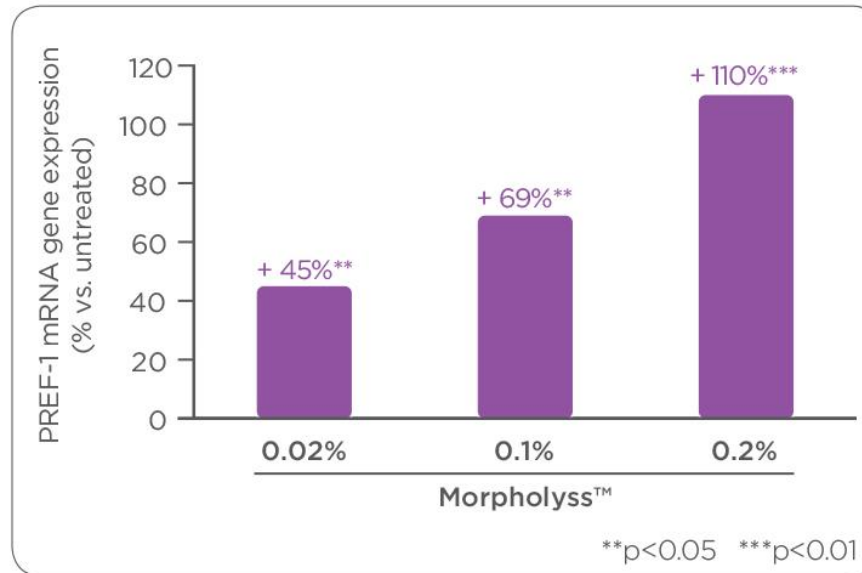


# DECREASED PREADIPOCYTE DIFFERENTIATION (1)

## *In vitro* protocol

- Culture of primary human preadipocytes (isolated from adipose tissue of a 38 years-old healthy woman) in a differentiation medium
- Addition of several doses of Morpholyss™
- At D5, analysis of Pref-1 gene expression by RNA quantification

EVALUATION OF PREF-1 GENE EXPRESSION



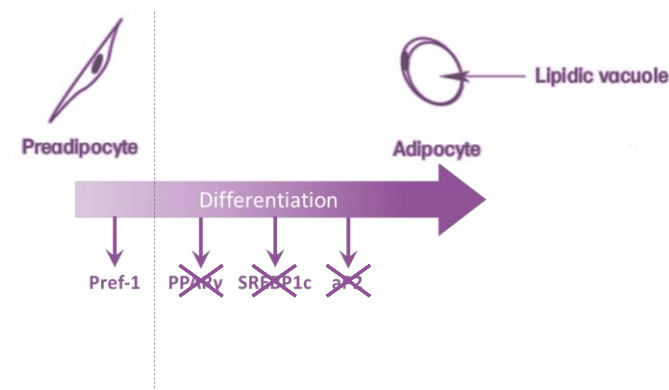
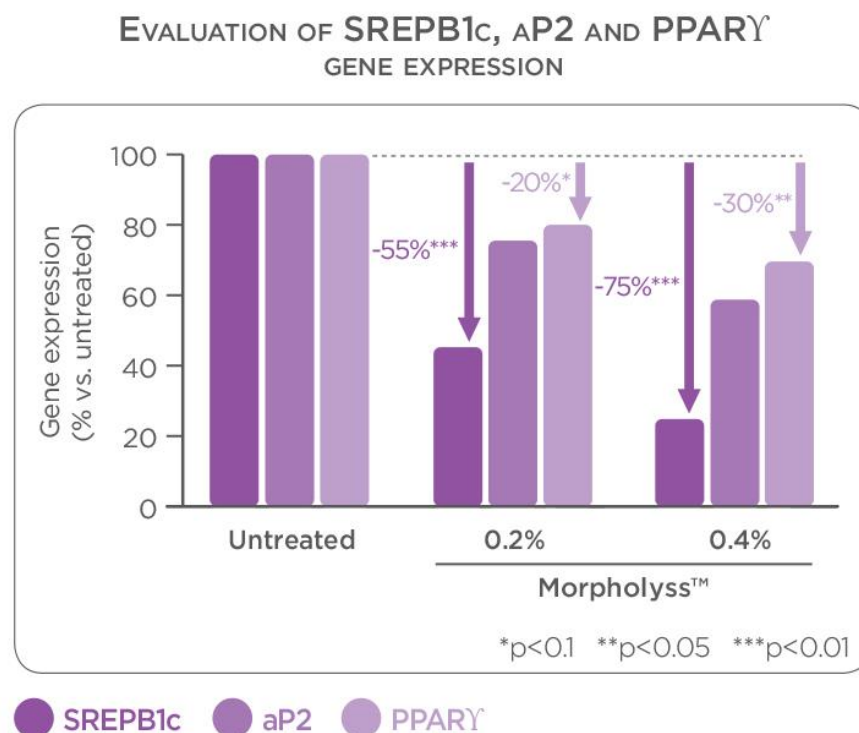
Increasing of Pref-1 gene expression attests that Morpholyss™ inhibits preadipocyte differentiation



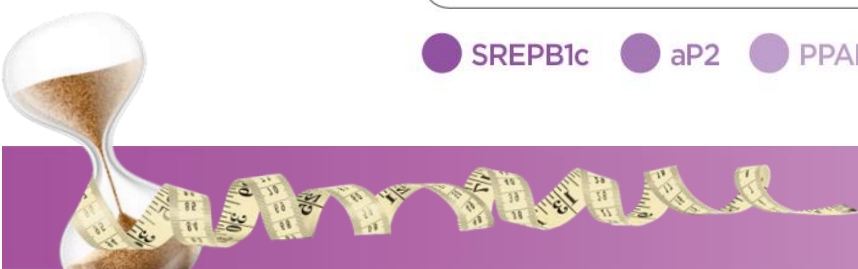
# DECREASED PREADIPOCYTE DIFFERENTIATION (2)

## *In vitro* protocol

- Culture of 3T3L1 preadipocytes in a differentiation medium
- Addition of several doses of Morpholyss™
- At D3, analysis of PPAR $\gamma$ , aP2 and SREBP1c gene expression by RNA quantification



**Morpholyss™ has a strong inhibiting action on the differentiation process with a dose-dependent effect**



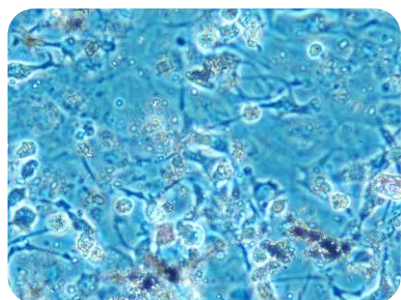


# DECREASED PREADIPOCYTE DIFFERENTIATION (3)

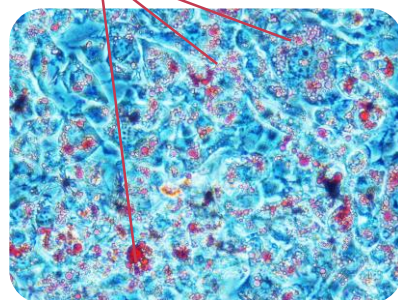
## *In vitro* protocol

- Culture of 3T3L1 preadipocytes in a differentiation medium
- Addition of several doses of Morpholyss™
- At D4, cells were fixed then stained with Oil Red O working solution for lipid droplets detection.
- Observation and quantification of the lipid droplets by absorption at 492nm, of the dye retained by the cells

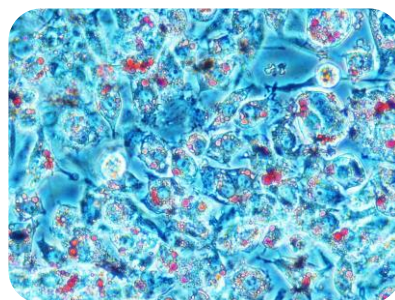
Red droplets: staining of lipids



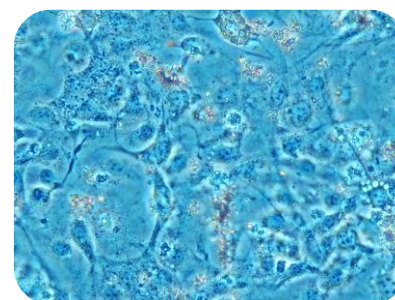
Without differentiation  
(100% preadipocytes)



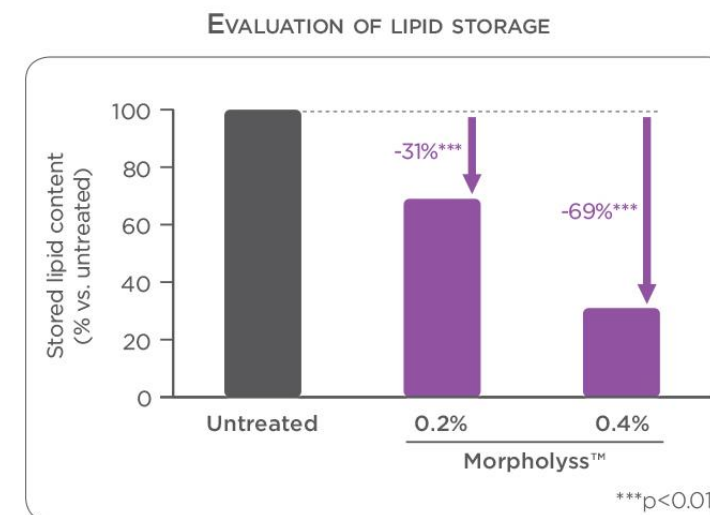
Untreated  
(Mature adipocytes)



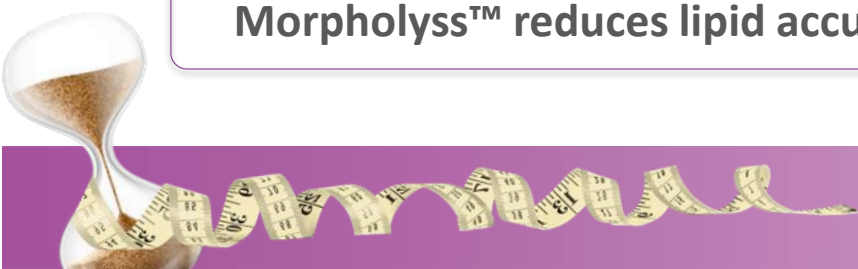
Morpholyss™ 0.4%



Morpholyss™ 0.8%



**Morpholyss™ reduces lipid accumulation capacity attesting a decrease in the preadipocyte differentiation**

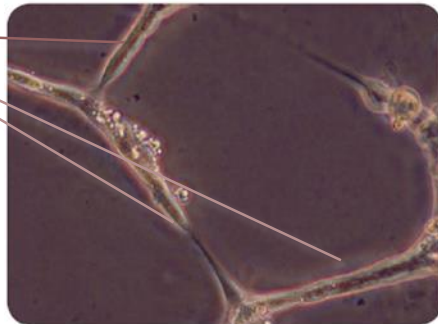


# REDUCED ANGIOGENESIS

## *In vitro* protocol

- Endothelial cells (HUVEC) cultivated on Matrigel® (inducer of angiogenesis)
- Addition of several doses of Morpholyss™
- Observation of angiogenesis by photography with a digital camera attached to a phase-contrast microscopy at different conditions

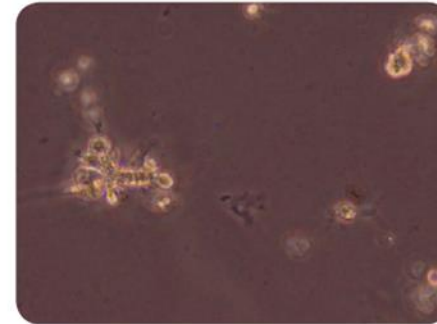
Development of  
vasculature



Untreated

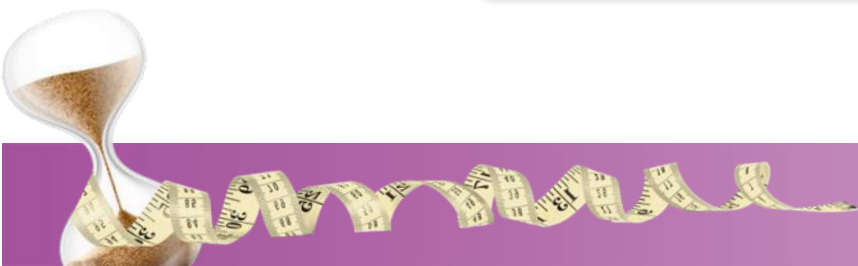


Morpholyss™ 0.2%



Morpholyss™ 0.4%

**Morpholyss™ reduces the neovascularization with a dose-dependent effect**

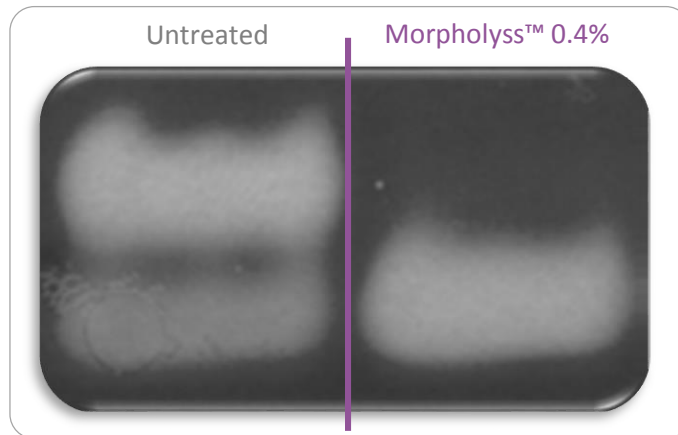


# LIMITED ECM DISORGANIZATION

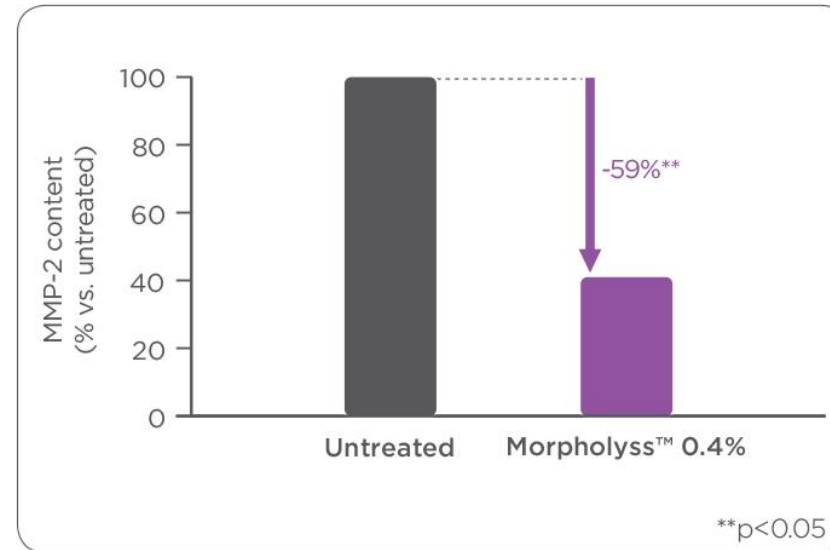
## *In vitro* protocol

- Culture of primary human preadipocytes (isolated from adipose tissue of a 38 years-old healthy woman) in a differentiation medium
- Addition of 0.4% of Morpholyss™
- At D7, observation of MMP-2 content by zymography & quantification by an ELISA method

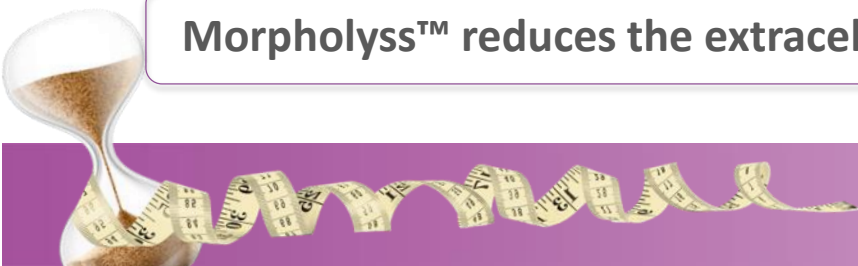
OBSERVATION OF MMP-2 CONTENT BY ZYMOGRAPHY



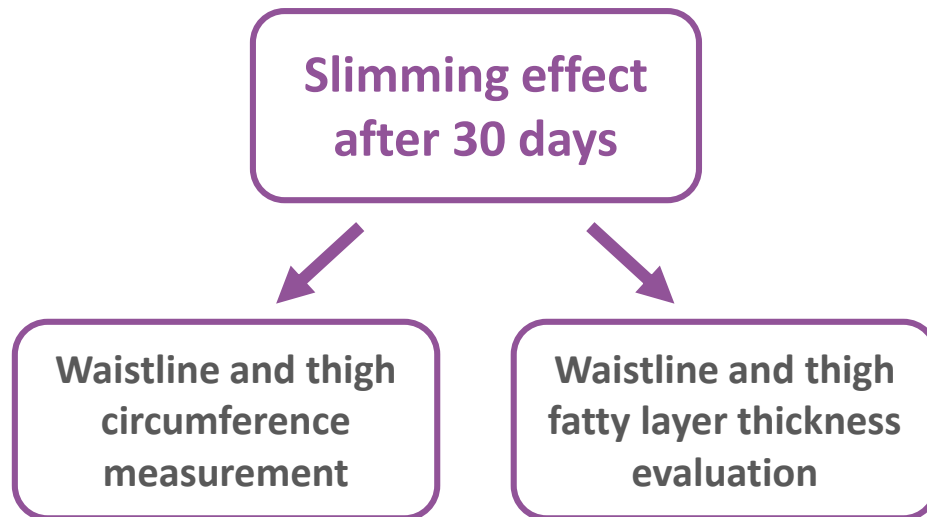
EVALUATION OF MMP-2 SYNTHESIS BY ELISA METHOD



**Morpholyss™ reduces the extracellular matrix disorganization involved in vasculature and adipocyte expansion**



# CLINICAL STUDIES



	Active formula	Placebo
INCI NAME	%	%
Water	75.20	77.20
Sodium Phytate (and) Aqua (and) Alcohol	0.10	0.10
Glycerin	3.00	3.00
Glycerin (and) Picea Abies Extract (and) Alcohol	1.00	1.00
Lysolecithin (and) Sclerotium Gum (and) Xanthan Gum (and) Pullulan – <b>Ecogel™</b>	2.00	2.00
Prunus Amygdalus Dulcis (Sweet Almond) Oil	5.00	5.00
Glyceryl Stearate Citrate (and) Polyglyceryl-3 Stearate (and) Hydrogenated Lecithin – <b>Heliofeel™</b>	4.00	4.00
Isoamyl Laurate	2.00	2.00
Polyglyceryl-5 Dioleate	1.00	1.00
<b>Glycerin (and) Water (and) Nephelium Longana Seed Extract – Morpholyss™</b>	<b>2.00</b>	<b>0.00</b>
Polymethyl methacrylate	0.50	0.50
Aqua (and) Glycerin (and) Sodium Levulinate (and) Sodium Anisate	4.00	4.00
Fragrance	0.20	0.20



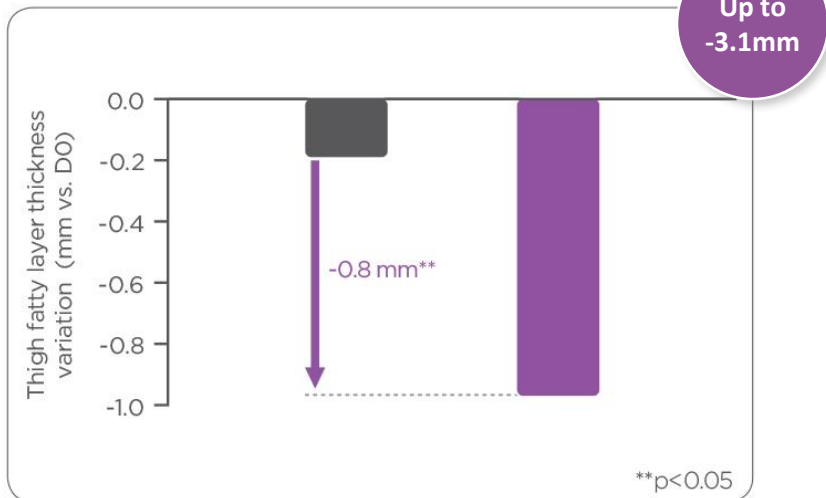
# CLINICALLY EFFICACY ON SLIMMING EFFECT

## - THIGHS -

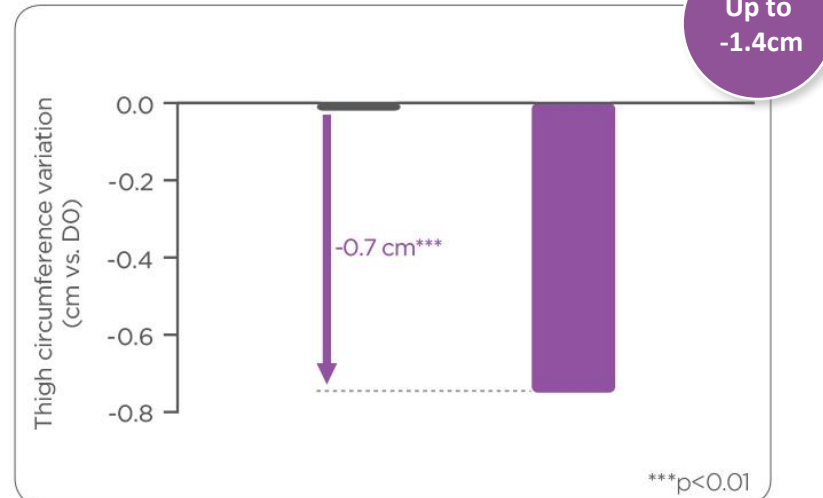
### *In vivo* protocol

- 17 women (age > 35 years)
- Twice daily application on one thigh of a cream with 2% Morpholyss™ vs. a placebo on the other thigh for 30 days
- Measurement of fatty layer thickness with ultrasound technique (BX2000® BodyMetrix)
- Measurement of thigh circumference

EVALUATION OF THIGH FATTY LAYER THICKNESS

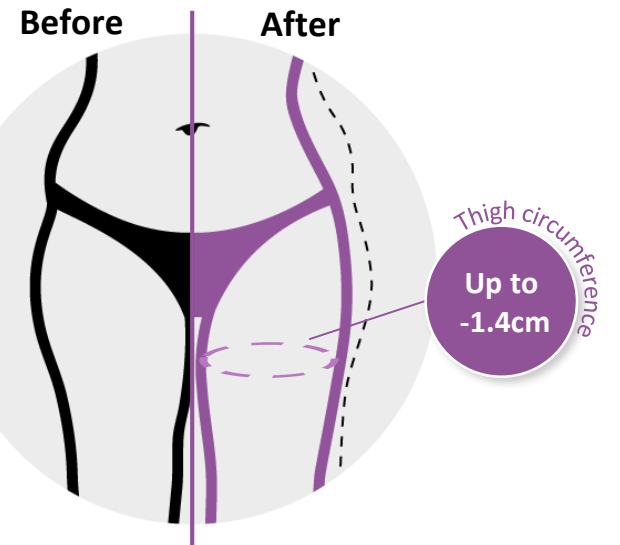


EVALUATION OF THIGH CIRCUMFERENCE



● Placebo ● Morpholyss™

● Placebo ● Morpholyss™



Fast results!  
(1 month)

Without  
massage  
step

> 94%  
positive  
response

Morpholyss™ provides a fast and significant slimming effect



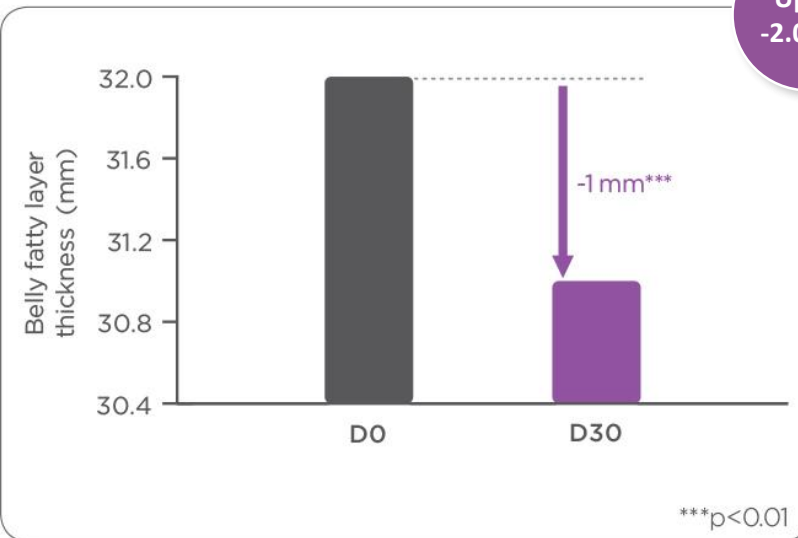
# CLINICALLY EFFICACY ON SLIMMING EFFECT

## - WAISTLINE -

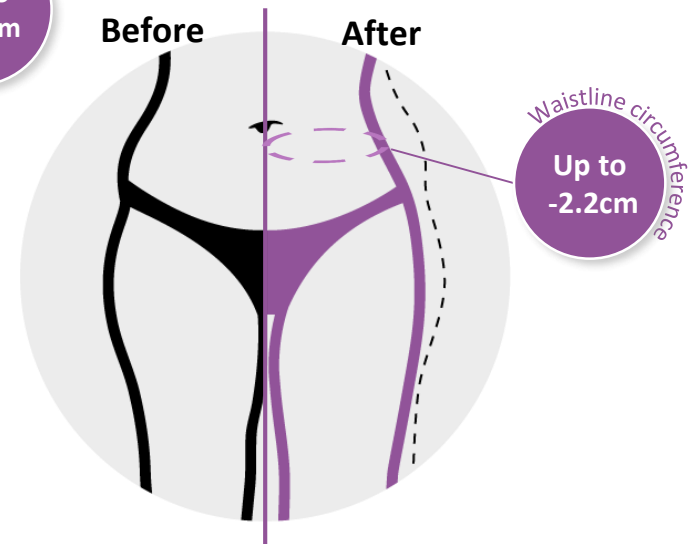
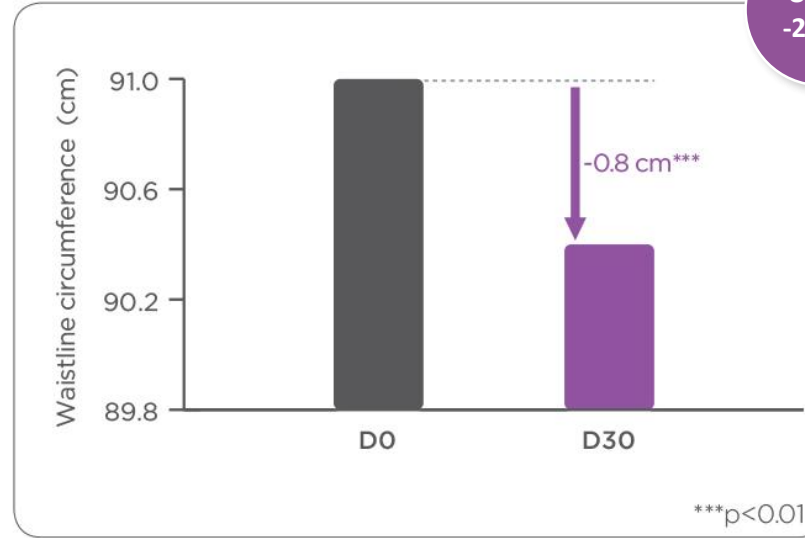
### *In vivo* protocol

- 17 women (age > 35 years)
- Twice daily application on belly of a cream with 2% Morpholyss™ for 30 days
- Measurement of fatty layer thickness with ultrasound technique (BX2000® BodyMetrix)
- Measurement of waistline circumference

EVALUATION OF BELLY FATTY LAYER THICKNESS



EVALUATION OF WAISTLINE CIRCUMFERENCE



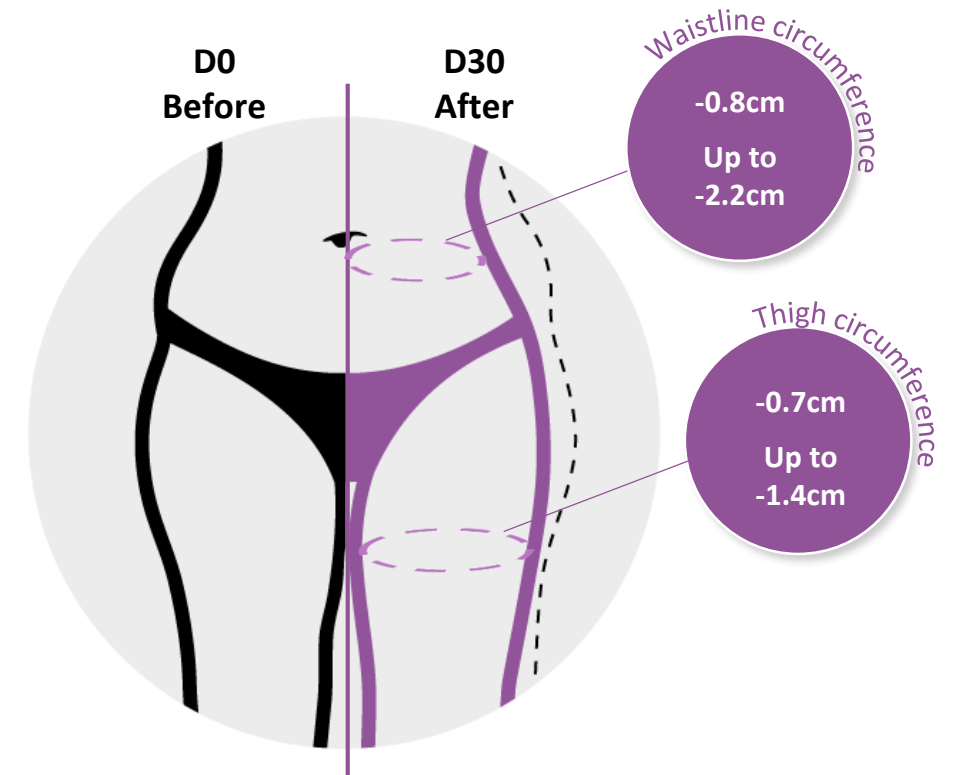
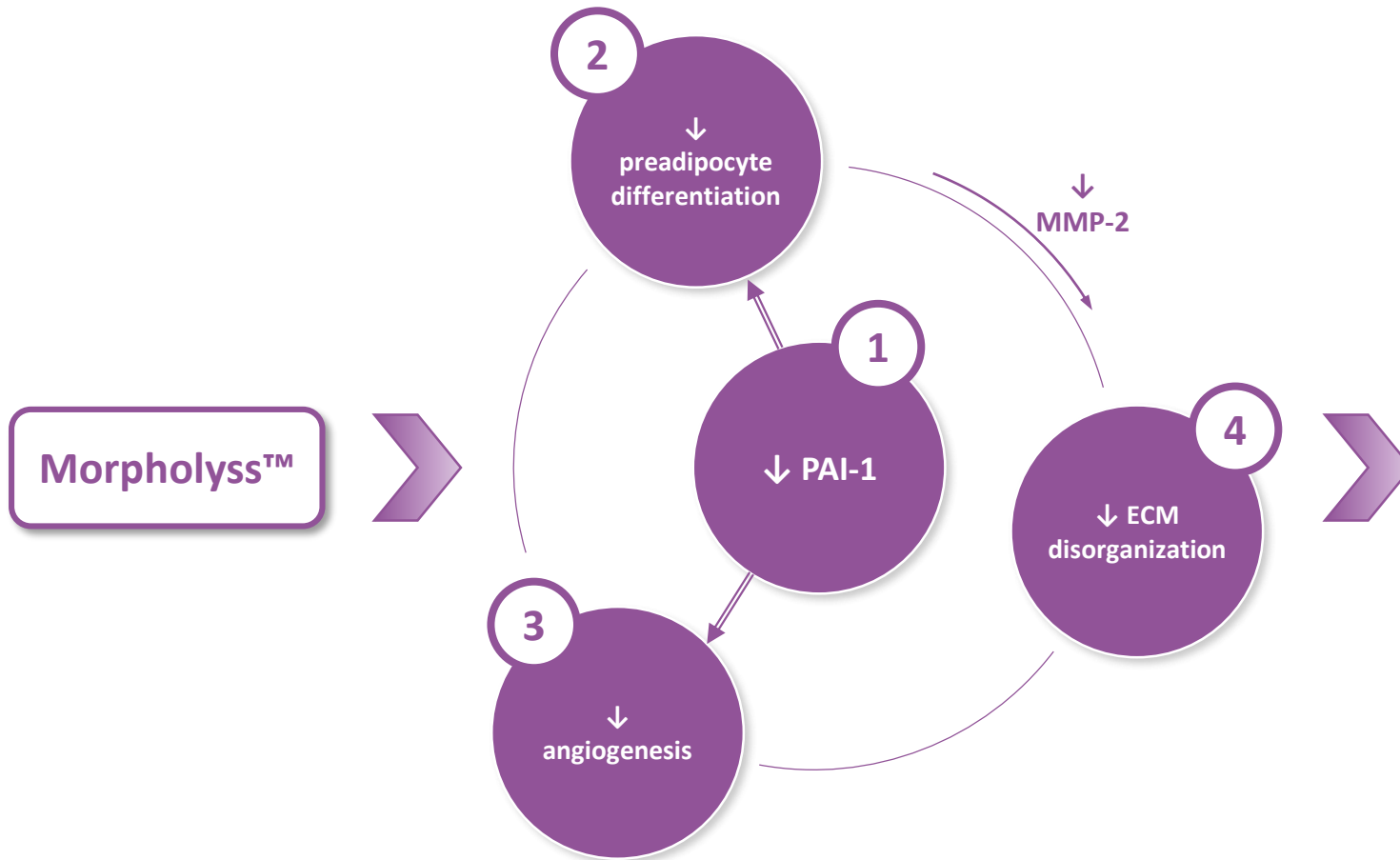
Fast  
results!  
(1 month)

Without  
massage  
step

> 88%  
positive  
response

Morpholyss™ provides a fast and significant slimming effect

# SUMMARY



Morpholyss™ helps restore and maintain a youthful body shape despite aging.



# MORPHOLYSS™

## LIPOMORPHING™ FOR A SLIMMER SILHOUETTE DESPITE AGING

Natural and clinically efficient ingredient that helps men & women concerned by Lipo-aging™ restore and maintain a youthful silhouette to feel better in their mind & body.

### LIPOMORPHING™ AGAINST BODY AGING

- Provides slimming action against chronological body aging
- Controls and reduces adipose tissue
- Multi-applications: slimming, preventive, anti-recurrence



### NEXT SUPERFRUIT!

- Longan fruit seed extract rich in polyphenols (particularly corilagin)



### OVERALL REDUCTION IN ADIPOSE TISSUE

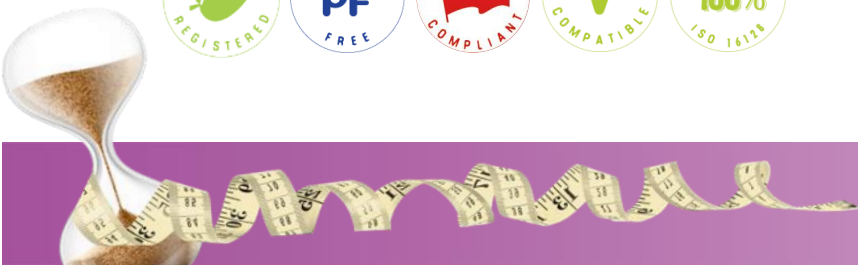
- ↓ PAI-1 gene expression
- ↓ preadipocyte differentiation
- ↓ angiogenesis
- ↓ ECM disorganization

### CONSUMER BENEFITS

- Decreases circumference and adipose tissue thickness of thigh and waistline
- Helps restore and maintain a youthful body shape despite aging

### MANUFACTURER BENEFITS

- Natural fruit-based active ingredient
- New concept of body anti-aging
- Complementary effect to lipolytic active ingredients (such as caffeine)



# PRODUCT INFORMATION

<b>INCI NAME</b>	Glycerin (and) Water (and) Nephelium Longana Seed Extract
<b>ADDITIVE</b>	None
<b>APPEARANCE</b>	Amber to brown aqueous translucent solution
<b>FORMULATION</b>	Should be incorporated at the end of the formulation at a temperature below 40°C
<b>DOSAGE</b>	<p>Slimming: 1-2%</p> <p>Preventive: 0.5-1%</p> <p>Anti-recurrence: 0.5-1%</p> <p>Complementary to caffeine: 0.5-2%</p>
<b>OPTIMUM pH</b>	3.0 - 8.0
<b>APPLICATIONS</b>	<ul style="list-style-type: none"> <li>• Anti-aging body care</li> <li>• Slimming body care</li> <li>• Preventive slimming body care</li> <li>• Anti-recurrence slimming body care</li> </ul>

**COSMOS REGISTERED**



**PRESERVATIVE FREE**



**CHINA COMPLIANT**



**VEGAN COMPATIBLE**



**NATURALNESS**



# APPLICATIONS - CLAIMS

## Dosage:

- Slimming: 1-2%
- Preventive: 0.5-1%
- Anti-recurrence: 0.5-1%
- Complementary to caffeine: 0.5-2%

## Applications:

- Body cream
- Body milk
- Body lotion
- Body gel
- Anti-aging body care
- Slimming body care
- Preventive slimming body care
- Anti-recurrence slimming body care



*Feeling good in my body,  
Feeling good in my mind...*

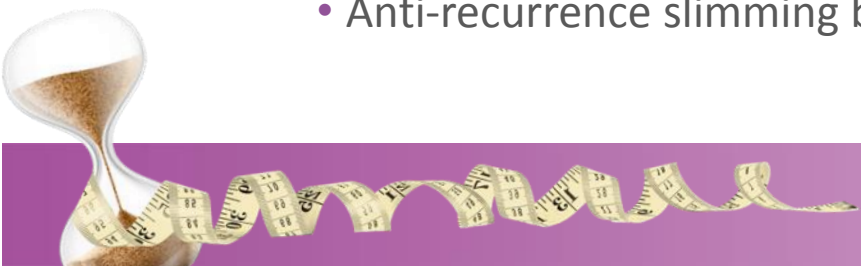
*Getting ready for the most important life event!*



*Beach body ready!*



*Keeping your silhouette longer...*







**Thank  
you!**

**For documentation, samples and prices,  
ask your sale representative:**

**Julien Janson:** [julien.janson@lucasmeyercosmetics.com](mailto:julien.janson@lucasmeyercosmetics.com)

**Caroline Tabourin :** [caroline.tabourin@lucasmeyercosmetics.com](mailto:caroline.tabourin@lucasmeyercosmetics.com)

**Distributors:** [www.lucasmeyercosmetics.com](http://www.lucasmeyercosmetics.com)