

SymHair<sup>®</sup> Force  
1631

510316

*The utmost hair &  
scalp revitalizer*

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# Symrise, always inspiring more...

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## DISCLAIMER







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# SymHair® Force

*The Utmost Hair Revitalizer*



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1		<i>Hair Loss? Get to the root of the problem</i>
2		<i>Microalgae – The Wonders of the Tahitian sea</i>
3		<i>SymHair® Force 1631 – Multitalented hair loss solution</i>
4		<i>SymHair® Force 1631 – Patch beard</i>
		<i>ID Card</i>
5		<i>Get Inspired!</i>

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Hair Loss?  
*Get to the root of  
the problem*

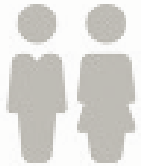
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# Hair Loss?

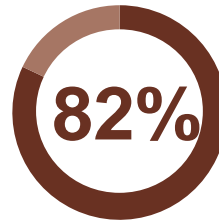
*Get to the root of the problem!*



*Hair loss & thinning correspond to one of the top solutions that consumers from most regions are ready to pay the most they can afford.*



*For both men & women, hair loss and thinning are the main signs of aging apart from hair greying.*



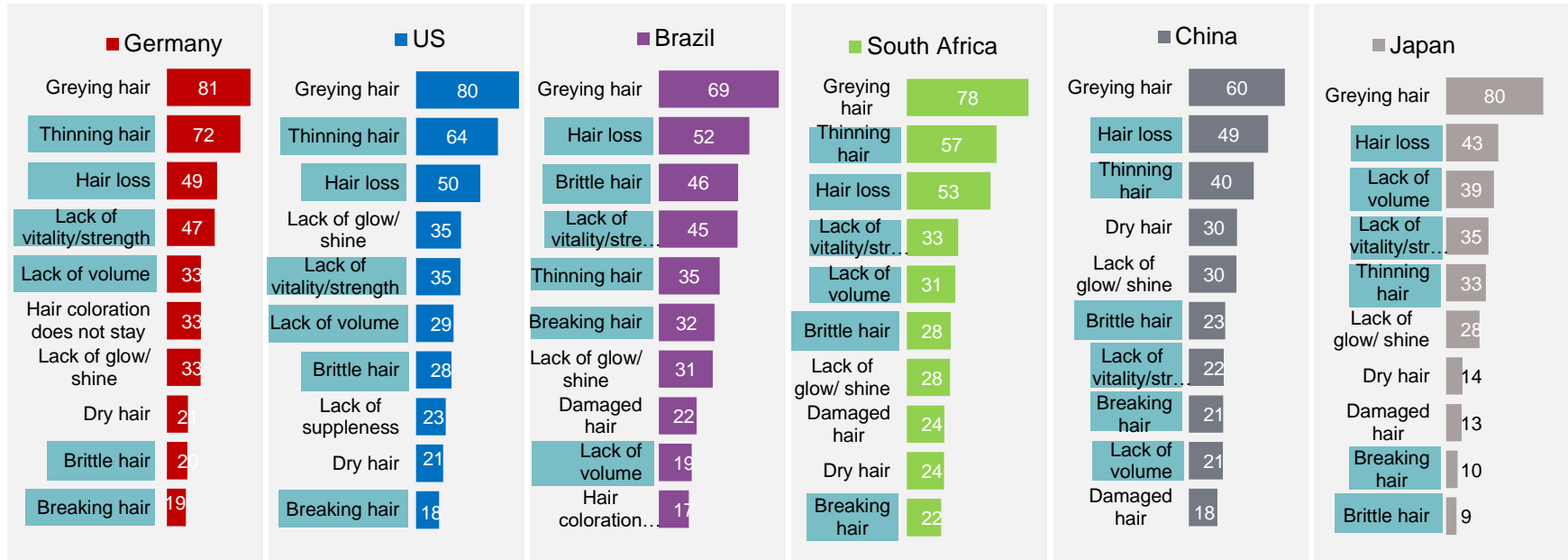
*Of global consumers want scalp solutions that target problems at their origin*

# Aging beyond greying

## Top 10 signs of hair aging



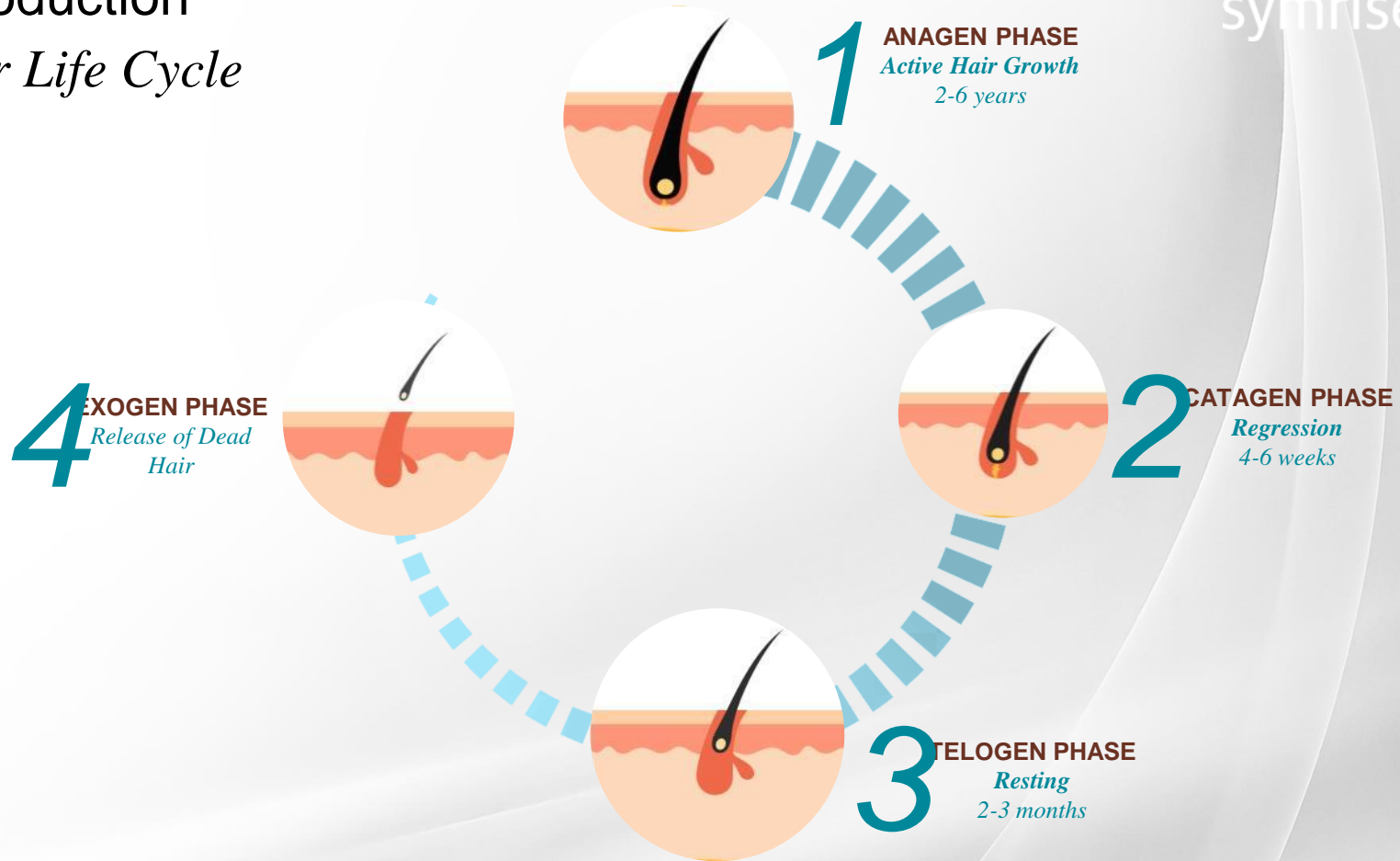
In the most important hair care market the first sign of aging hair is greying hair. Thinning hair and hair loss are also considered as major signs of aging.



Source: Cosmetic Ingredients Consumer Study 2015: Women n = 1000 in Germany, US, Brazil, China, Japan and n = 300 in South Africa. Independently of your hair. Which of the hair & scalp problems listed below would you say are clear signs of AGING hair? In %

# Introduction

## *Hair Life Cycle*



# What is Behind... *Hair Loss?*





Blue  
Biotechnology  
*The wonders of the  
Tahitian sea*

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# Blue Biotechnology

*The wonders of the Tahitian sea*

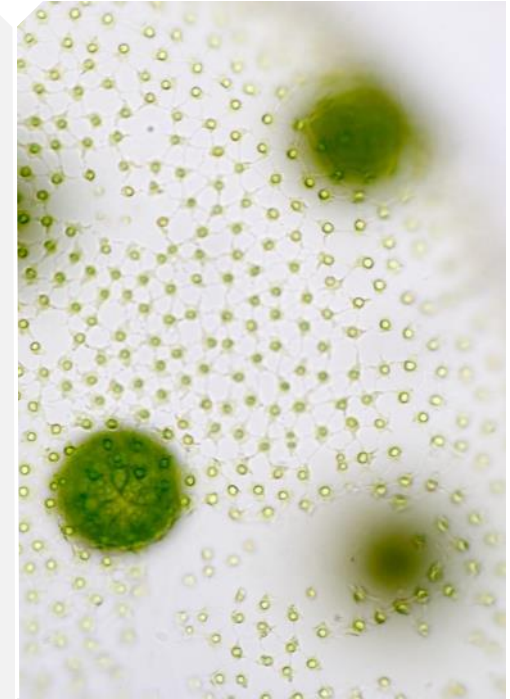
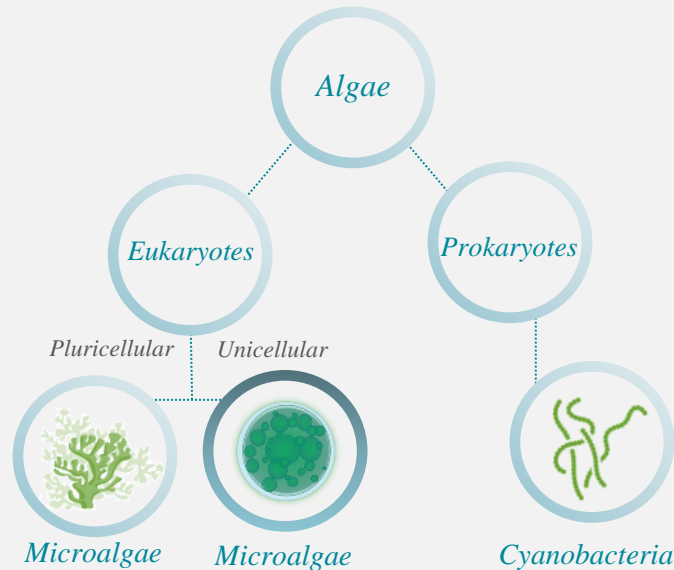
## Isochrysis Galbana

*An Essential Invisible*

From the natural paradise of Mataiva, Tahiti, a specific microalgae stands out among any other species.

The *Isochrysis galbana* (T-ISO) contains biologically active compounds that led Symrise to step forward and develop the most complete solution for hair loss from a sustainable process named **Blue Biotechnology**.

## Microalgae General Info



# Blue Biotechnology

## *Cultivation options*

### *Open Ponds*

- Allows to produce large quantities of microalgae at low costs
- High risk of contamination by other species or protozoa
- Unstable, uncontrolled environmental conditions
- Only few algae species are suitable to be cultured using this technology
- Example: *Spirulina platensis* (production of 3000 t/a)<sup>1</sup>

### *Closed Photobioreactors*

- Requires higher investment and operating costs
- Low risk of contamination by other species
- Allows controlling of environmental conditions and stable production
- Possibility to cultivate a large variety of microalgae strains
- Sustainable process



# Blue Biotechnology

## *Biomass Production*

### Sustainably & Innovative

*The biomass production for SymHair® Force 1631 is highly controlled.*

*Cultivated with selected additives, it is possible to ensure an extremely valued ingredient, with compounds potentially active on human skin and hair.*



#### 01. Microalgae Inoculum



#### 02. Addition of:

- Artificial Sea Water
- Vitamins, Mineral Nutrients, Microelements, Up Cycling CO2
- Presence of sun rays

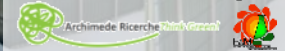


#### 03. Biomass production

*followed by drying and extraction*



Production In Partnership with:

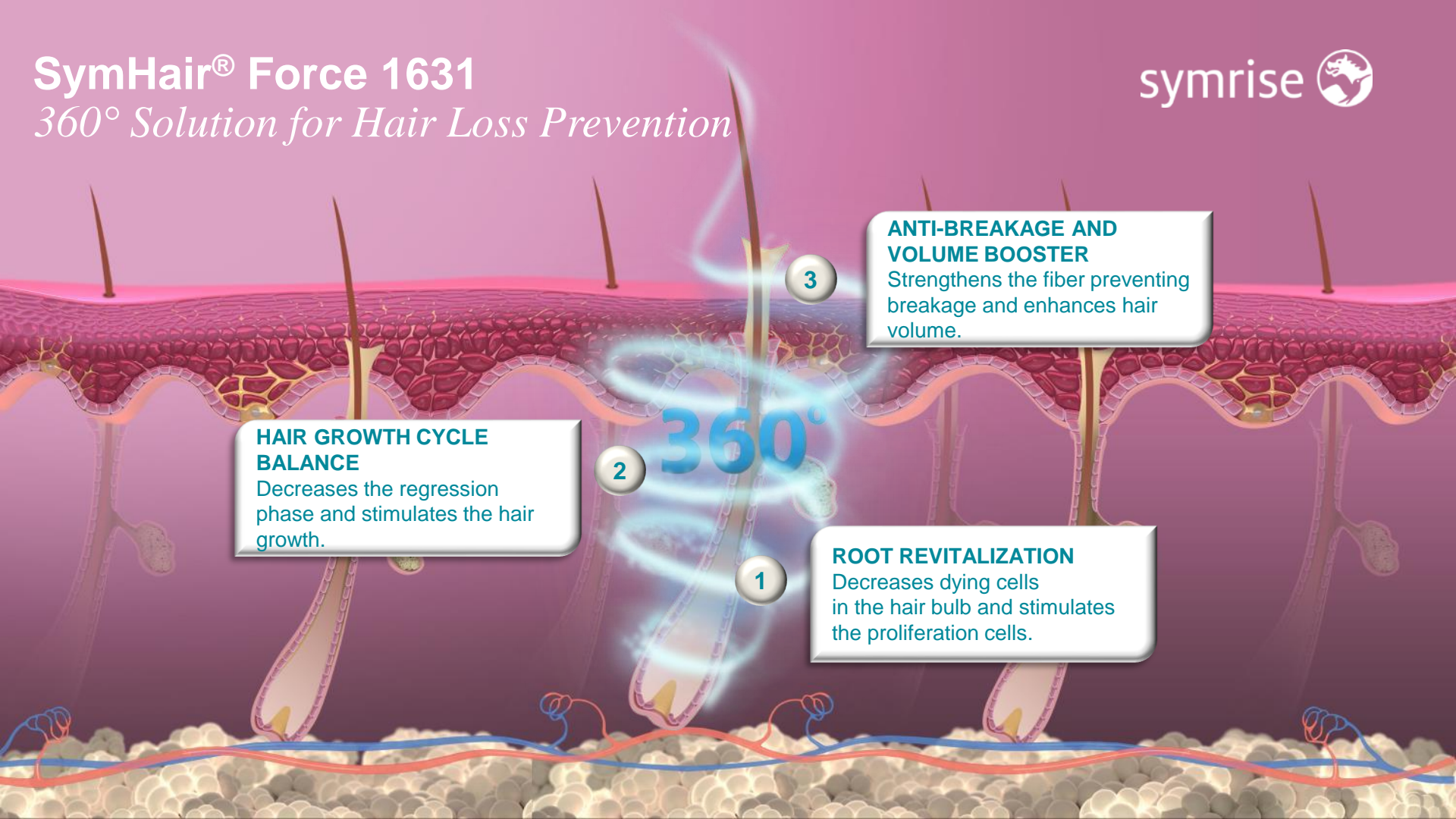


SymHair® Force  
1631  
*Multitalented hair  
loss solution*

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# SymHair® Force 1631

*360° Solution for Hair Loss Prevention*



## HAIR GROWTH CYCLE BALANCE

Decreases the regression phase and stimulates the hair growth.

2

360°

1

## ROOT REVITALIZATION

Decreases dying cells in the hair bulb and stimulates the proliferation cells.

3

## ANTI-BREAKAGE AND VOLUME BOOSTER

Strengthens the fiber preventing breakage and enhances hair volume.

# SymHair® Force 1631

*The science behind a complete hair renewal*



1

## **ROOT REVITALIZATION**

- *Prolongs the hair growth phase*
- *Ex vivo Studies*

2

## **HAIR GROWTH CYCLE BALANCE**

- *Balances the hair growth cycle*
- *Stimulates hair growth*
- *Hair loss prevention – clinical study*

3

## **ANTI-BREAKAGE AND VOLUME BOOSTER**

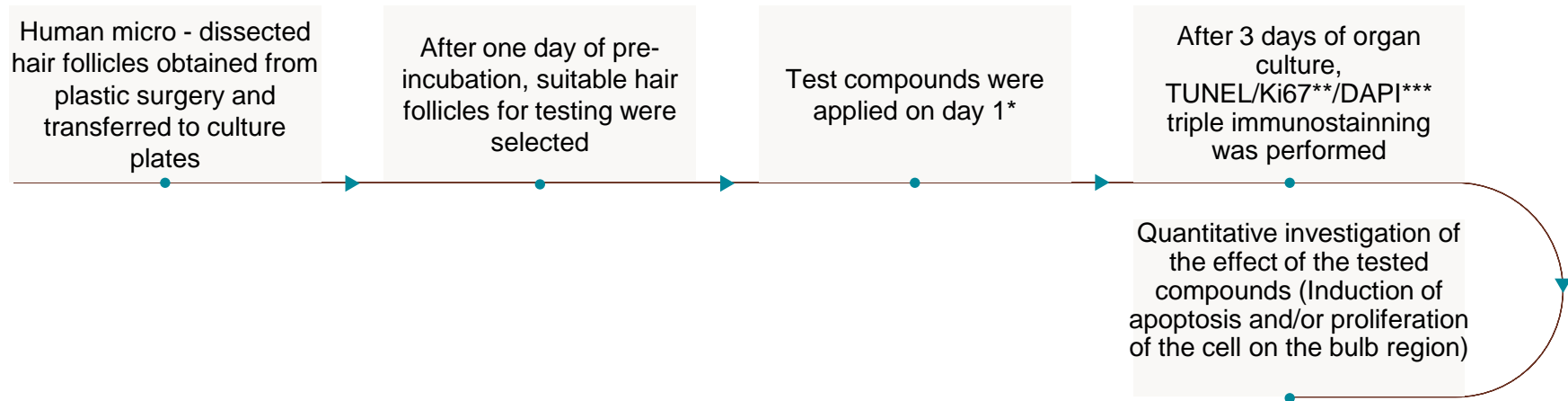
- *Strength enhancement*
- *Combability improvement*

# Follicle Stimulation

## Protocol



### *Ex Vivo – Hair Cycle Study II*



\*Preparation of supplemented media by addition of DMSO dissolved test compounds into the standard culture medium

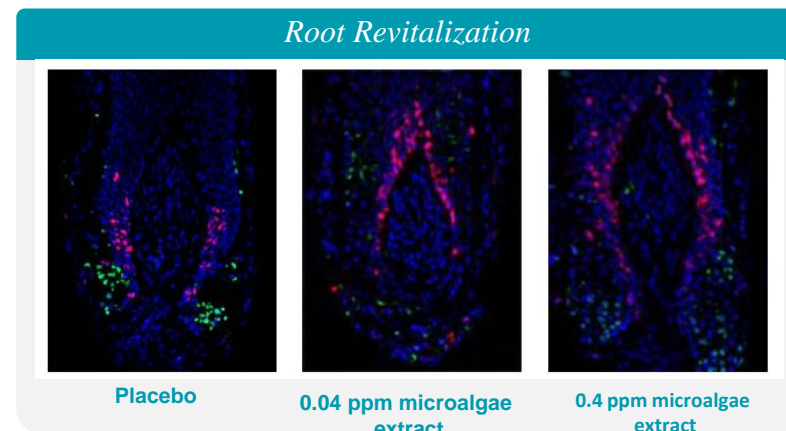
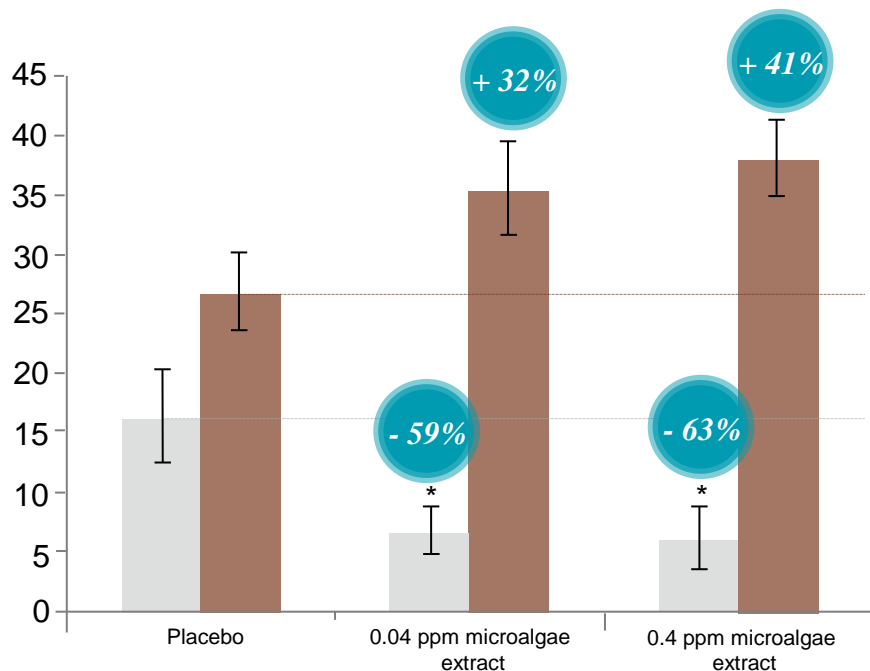
\*\*TUNEL and Ki67 label apoptotic and proliferating cell nuclei, respectively

\*\*\* DAPI, staining all the cell nuclei, is used as a control



# Follicle Stimulation

## Results



### Conclusion:

#### SymHair® Force 1631

Visibly **decreased** the number of apoptotic cells (**green**) and **increased** the number of proliferation cells (**red**) versus placebo.

■ TUNEL (i.e. apoptotic) ■ Ki-67 (i.e. proliferating)

\* $p < 0.05$ , compared to Placebo.

# Hair Cycle Staging – Mechanism of Action

## Protocol



### *Ex Vivo – Hair Cycle Study*

Human micro - dissected scalp hair follicles obtained from plastic surgery and transferred into 24 well culture plates

After one day of pre-incubation, suitable hair follicles for testing were selected

12 hair follicles per concentration and control were used

Test compounds were applied on day 1 and 3\*

Extrapolation of the hair cycle stage on the basis of the accepted morphologic criteria after 5 days of culture\*

After 5 days of culture, hair cycle staging was performed by morphological analysis of the bulb region stained with haematoxylin-eosin

\*Preparation of supplemented media by addition of DMSO dissolved test compounds into the standard culture medium

\*\*Müller-Röver et al., 2001, J. Invest. Dermatol.

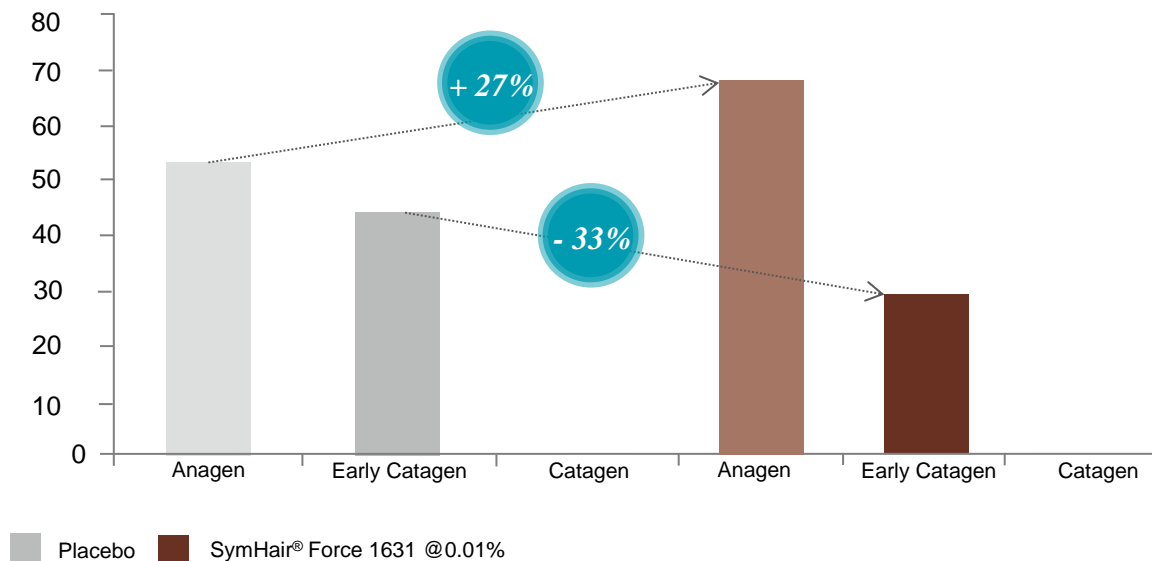
# Hair Cycle Staging – Mechanism of Action

## Results



### Growth Cycle Reset

*Prolongation of the hair dynamic phase*



### Conclusion:

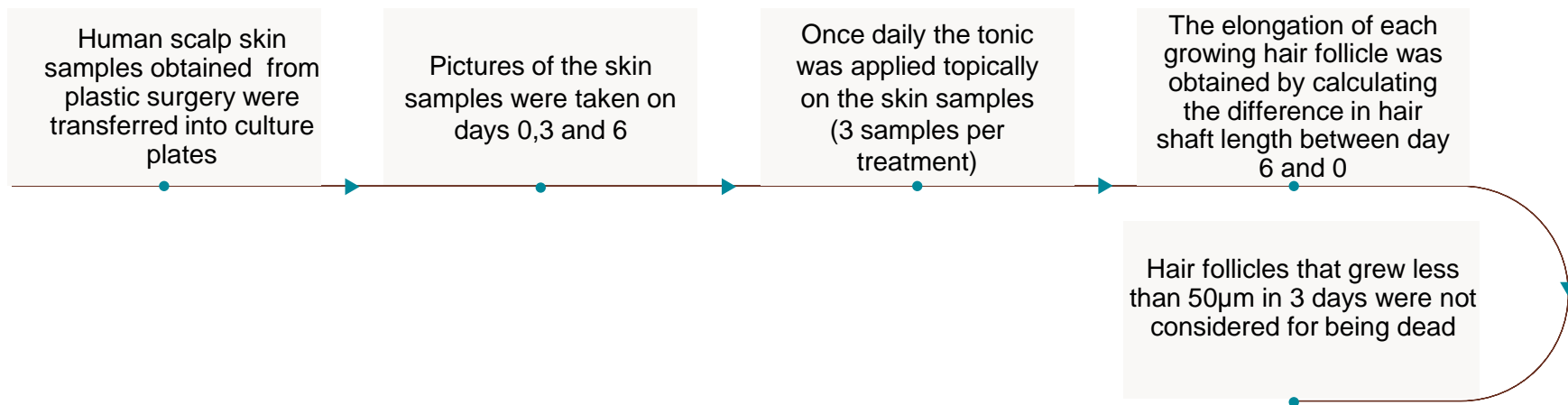
**SymHair® Force 1631**  
Increased 27% of hair  
follicles in the anagen phase  
and decreased 33% the  
catagen phase versus  
placebo.

# Hair Growth Stimulation

## Protocol



### *Ex Vivo – Hair Cycle Study II*



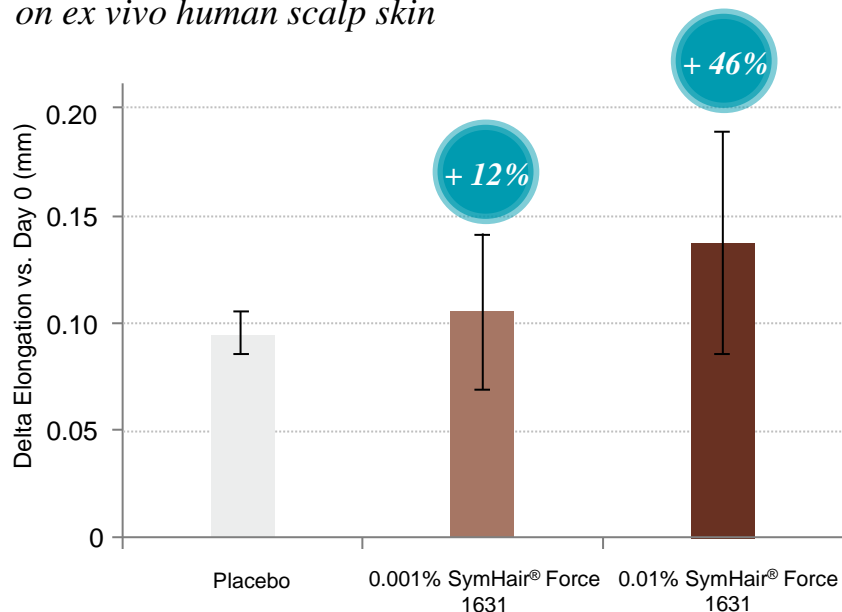
# Hair Growth Stimulation

## Results



### Hair Growth Stimulation

*on ex vivo human scalp skin*



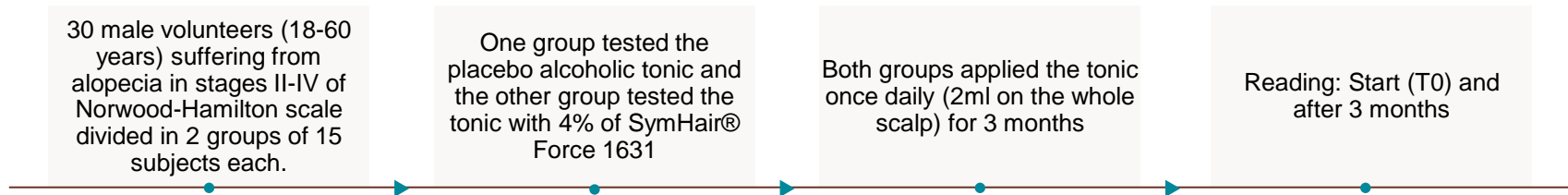
**Conclusion:**  
**SymHair® Force 1631**  
stimulates **up to 46%** the hair  
**growth** on ex-vivo human  
scalp skin **after 6 days.**

# Hair Loss Prevention – Clinical Study

## Protocol



### Clinical Study – Hair Loss Prevention

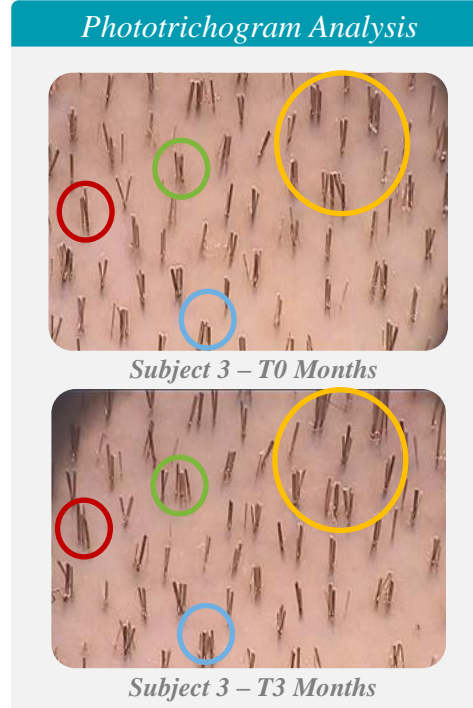
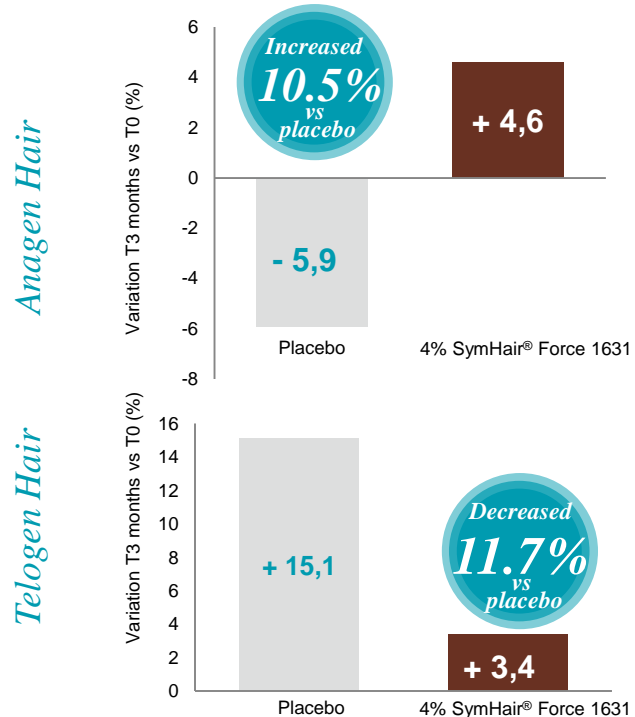


#### ASSESSMENT CRITERIA:

- Instrumental phototrichogram analysis: number of anagen and telogen hairs.
- Comparison of a photograph of a defined area of the scalp directly after hair clipping with a photograph taken after a certain period of time long enough to allow hair growth of the clipped segment (48 hours).
- Grown hairs = in anagen phase, non-grown hairs= in telogen phase
- Subjective analysis: Subjects evaluation of the efficacy of the treatment by filling in a specific questionnaire
- Clinical analysis: dermatologist judgement of the tolerability of the treatment and of the degree of dandruff, seborrhea, erythema, itching and burning

# Hair Loss Prevention – Clinical Study

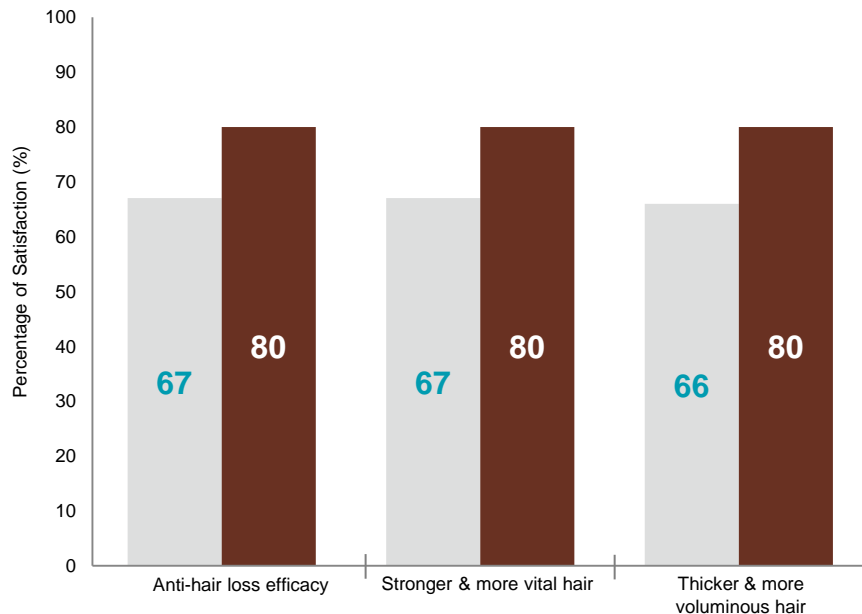
## Results



*Conclusion:*  
**SymHair® Force 1631**  
 increased by **10.5%** the  
**anagen phase** versus placebo  
 and decreased by **11.7%** the  
**telogen hair** versus placebo,  
 after 3 months.

# Hair Loss Prevention – Clinical Study

## Results



### Subject's evaluation by questionnaire analysis:

- After 3 months treatment
- 80% of the subjects who applied the active stated that they perceived
  - Anti hair loss efficacy
  - Stronger and more vital hair
  - Thicker/more voluminous hair

### Dermatologist's evaluation:

- Very good tolerance after 3 months of treatment

**SUBJECTIVE ANALYSIS:**  
80% of subjects have stronger, more vital & voluminous hair!

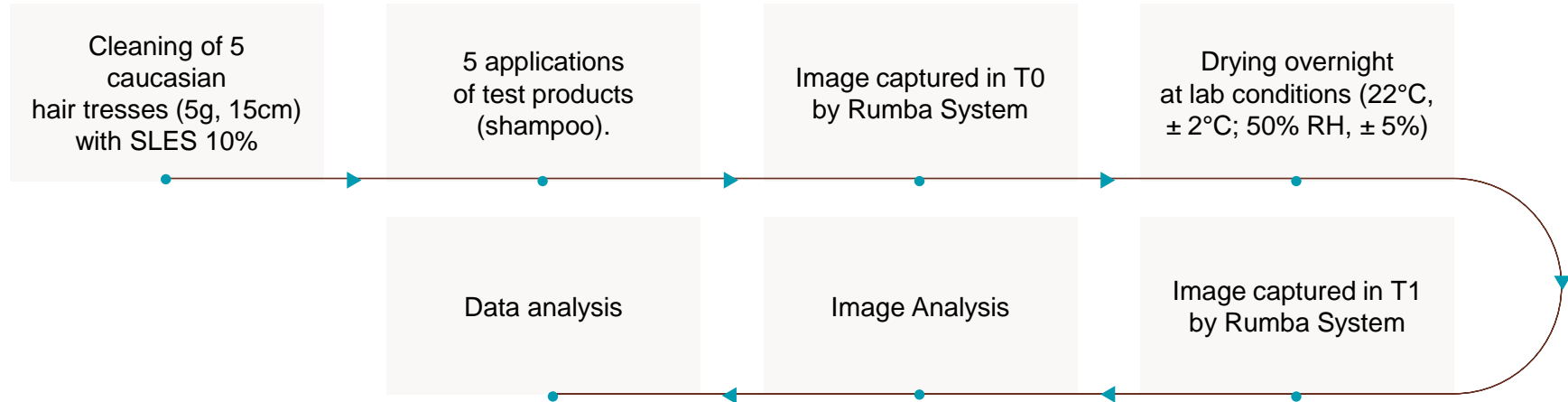


# Shape Assessment

## *Protocol*



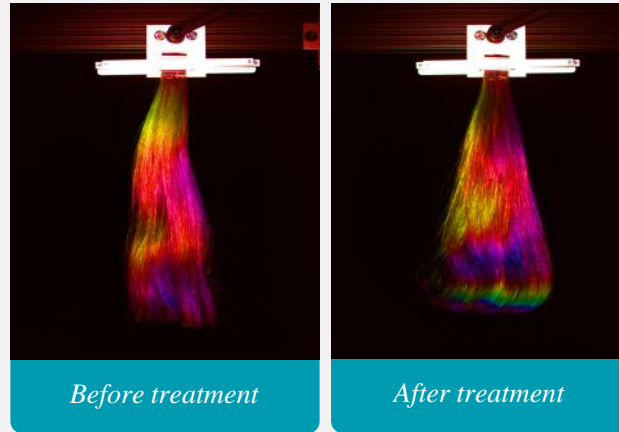
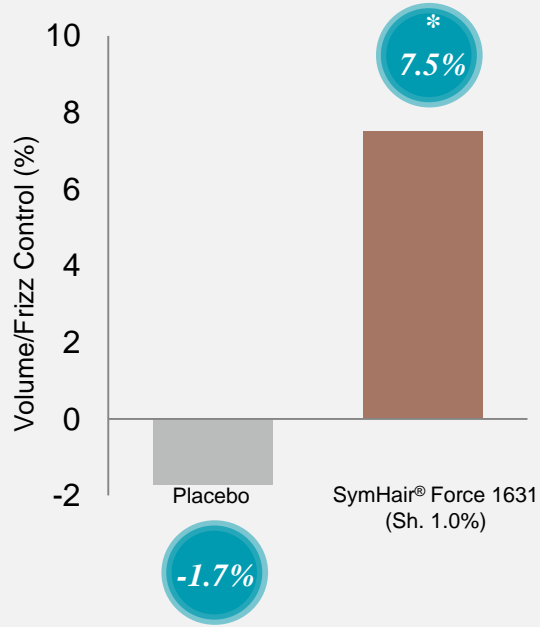
### *Protocol Shape Assessment*



# Volume Increase Results



## SymHair® Force 1631



### Conclusion:

**SymHair® Force 1631** increased the volume after wash with shampoo.

### Claims:

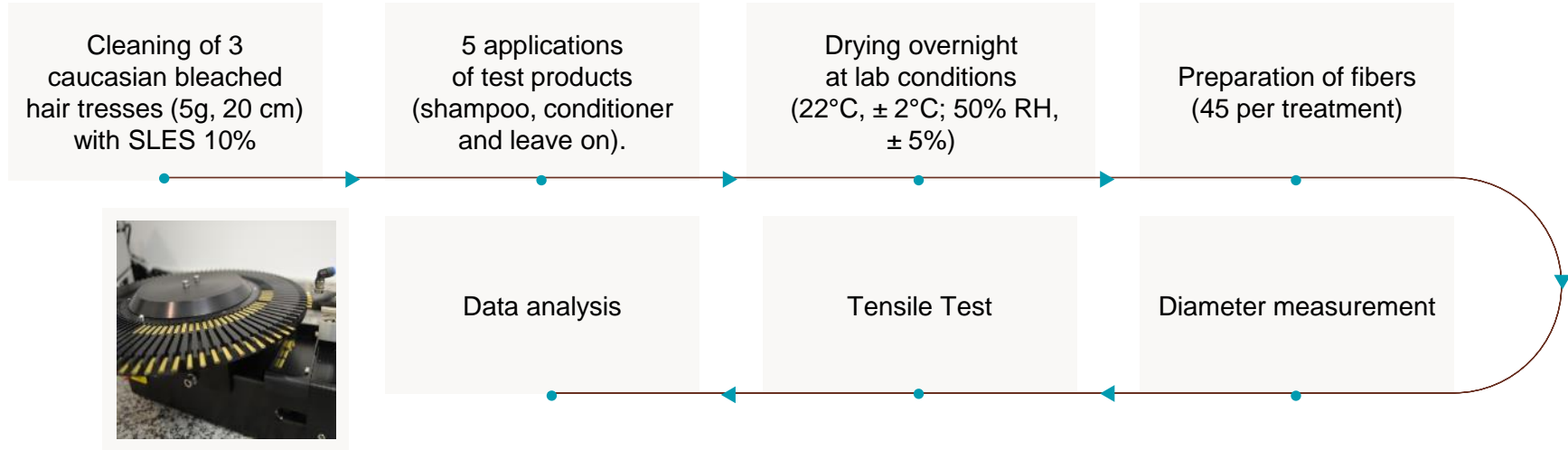
Volume booster, hair density improvement.

\* Compared to before treatment

# Strength Enhancement *Protocol*



## *Protocol Tensile Test*

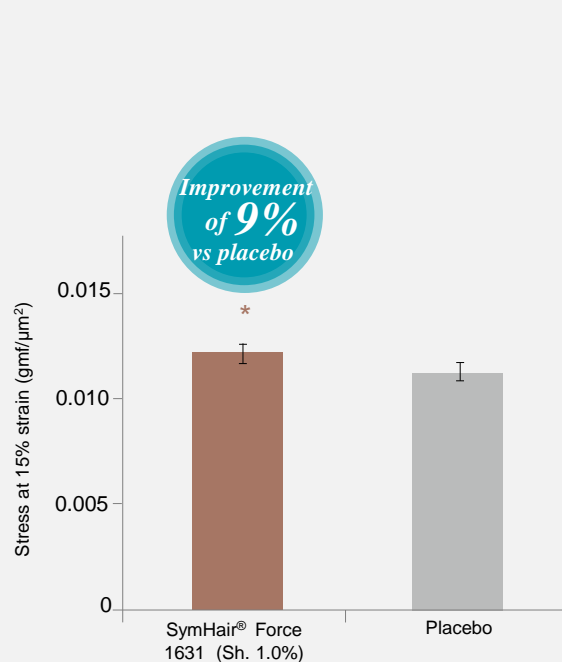
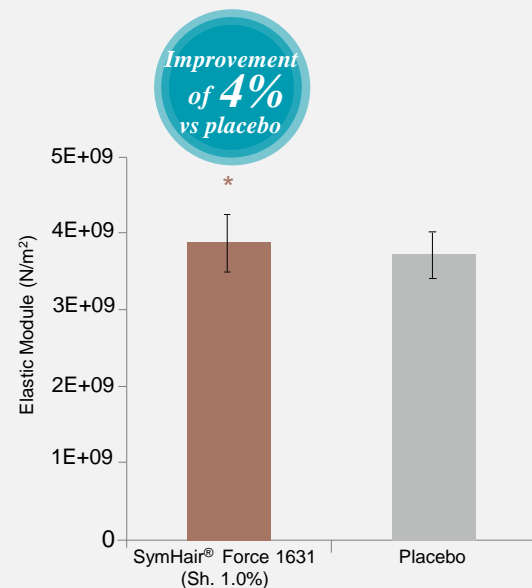


# Strength Enhancement

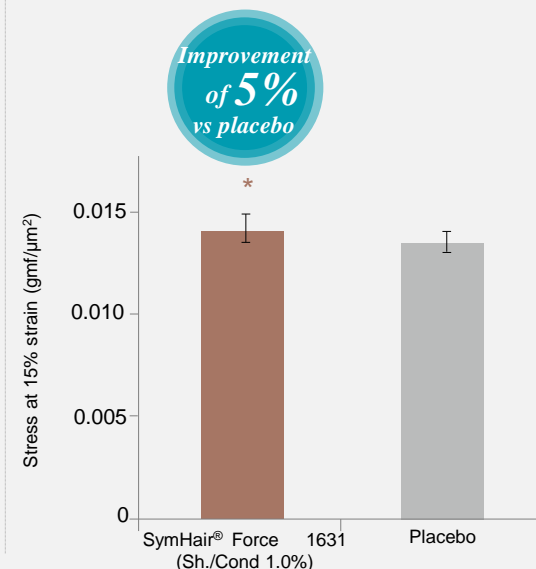
## Results



### Shampoo



### Shampoo + Conditioner

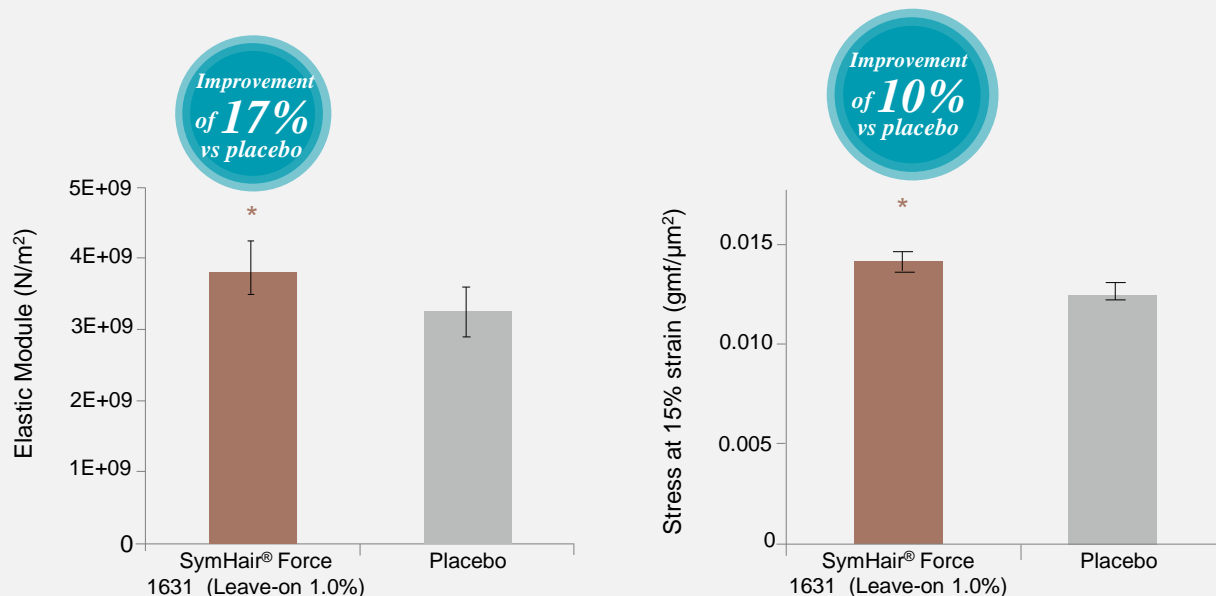


\*p<0.05, compared to Placebo.

# Strength Enhancement Results



## Leave - on



## Conclusion:

**SymHair® Force 1631** improved the hair force and resistance.



## Claims:

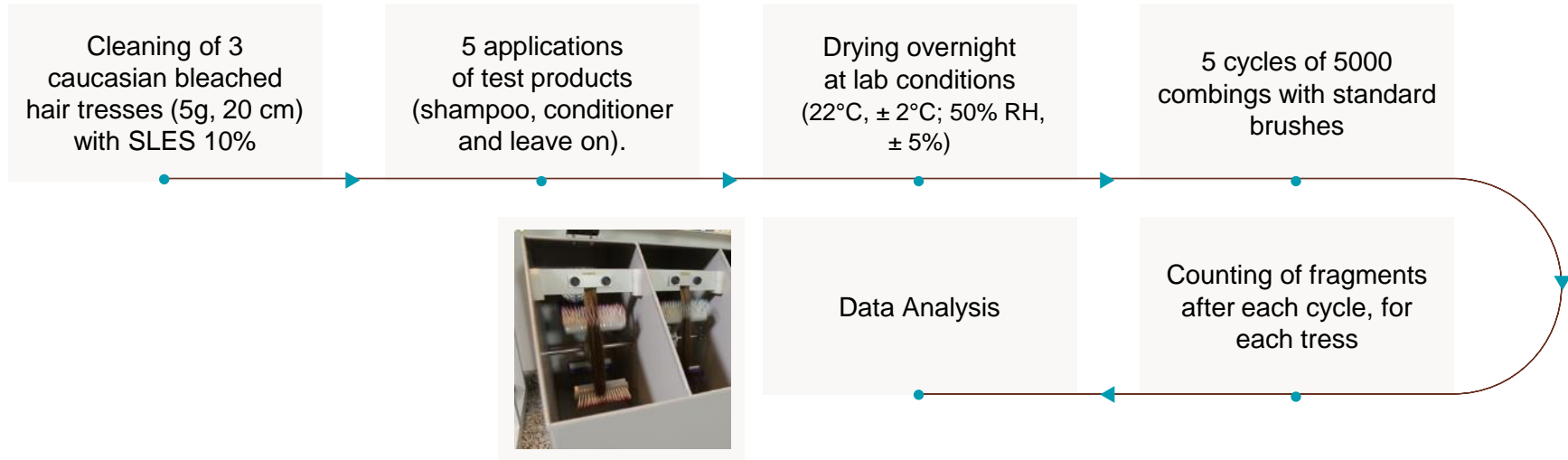
Improves hair resistance, force, strength and elasticity

\*p<0.05, compared to Placebo.

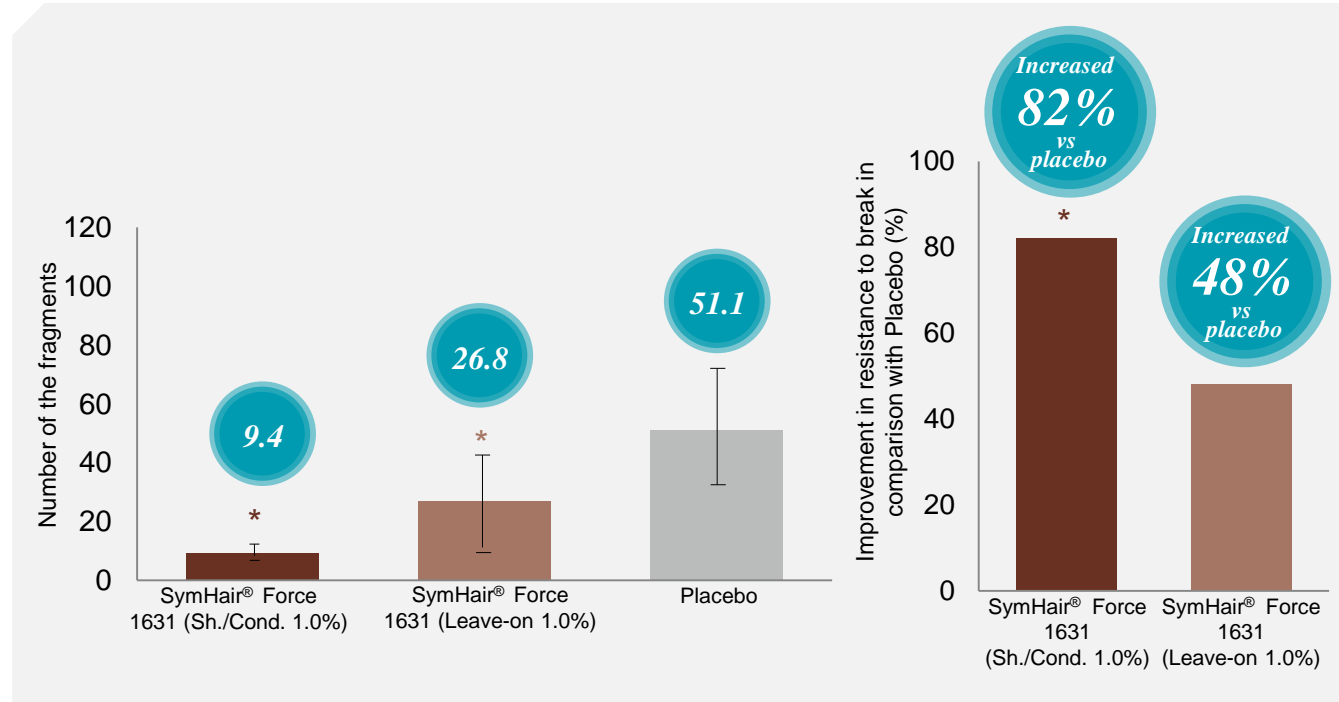
# Anti-Breakage *Protocol*



## *Protocol Breakage Test*



# Anti-Breakage Results



**Conclusion:**  
SymHair® Force 1631 improved the hair resistance. **Decreased the breakage up to 82%** compared with the placebo.

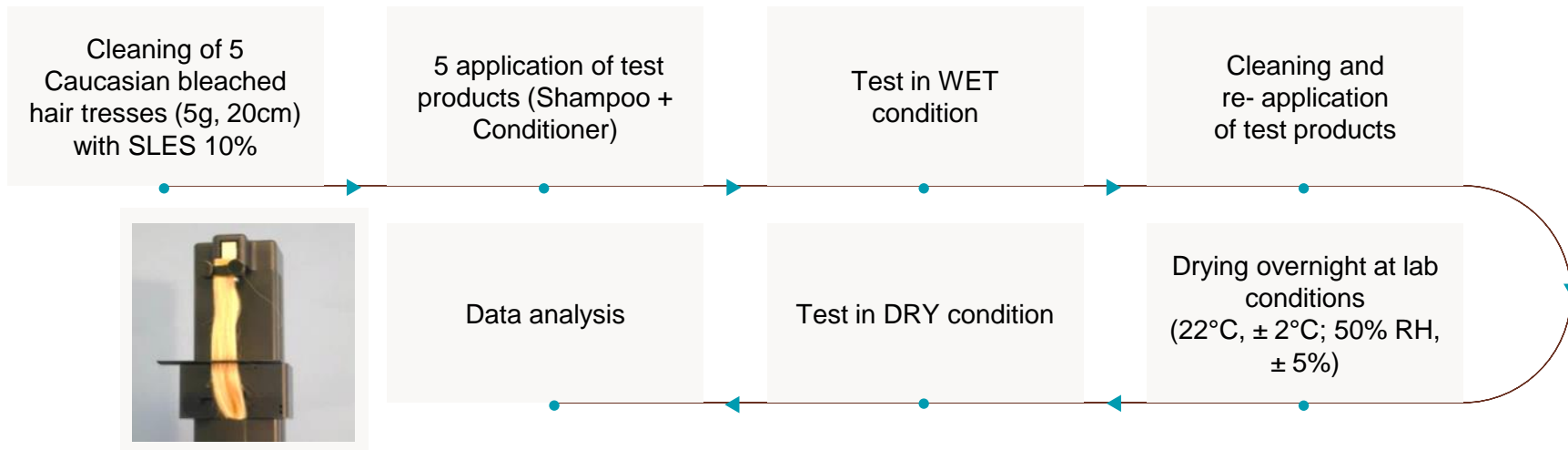
**Claims:**  
Anti breakage, hair resistance improvement, decreases hair loss caused by breakage.

\*p<0.05, compared to Placebo.

# Combability Improvement *Protocol*



## *Protocol Combability Flowchart – Caucasian Hair*

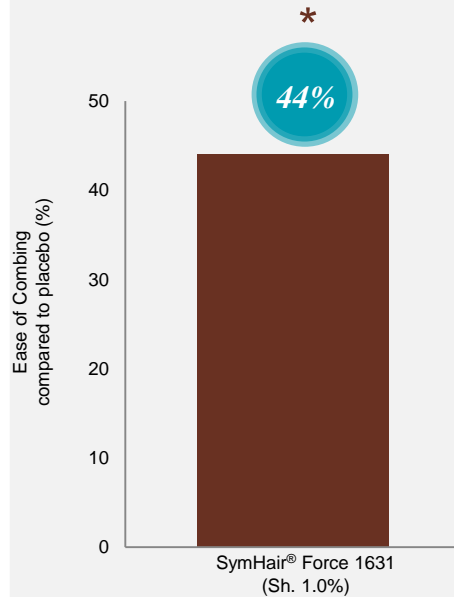




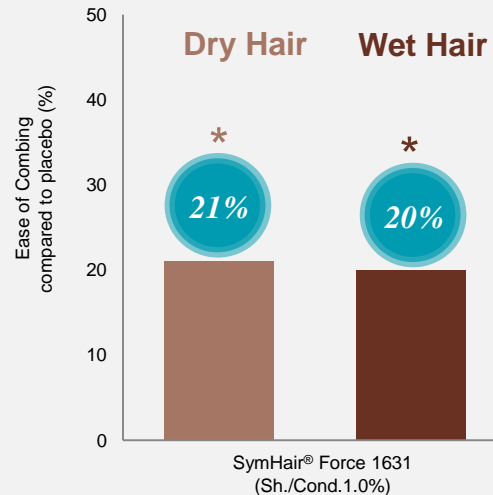
# Combability Improvement Results



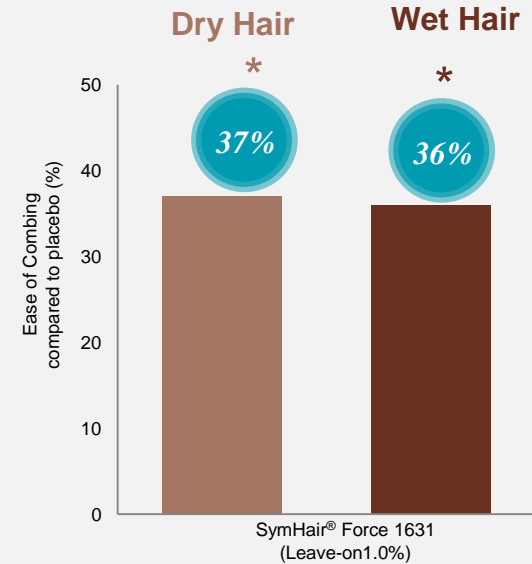
## Shampoo



## Shampoo + Conditioner



## Leave On

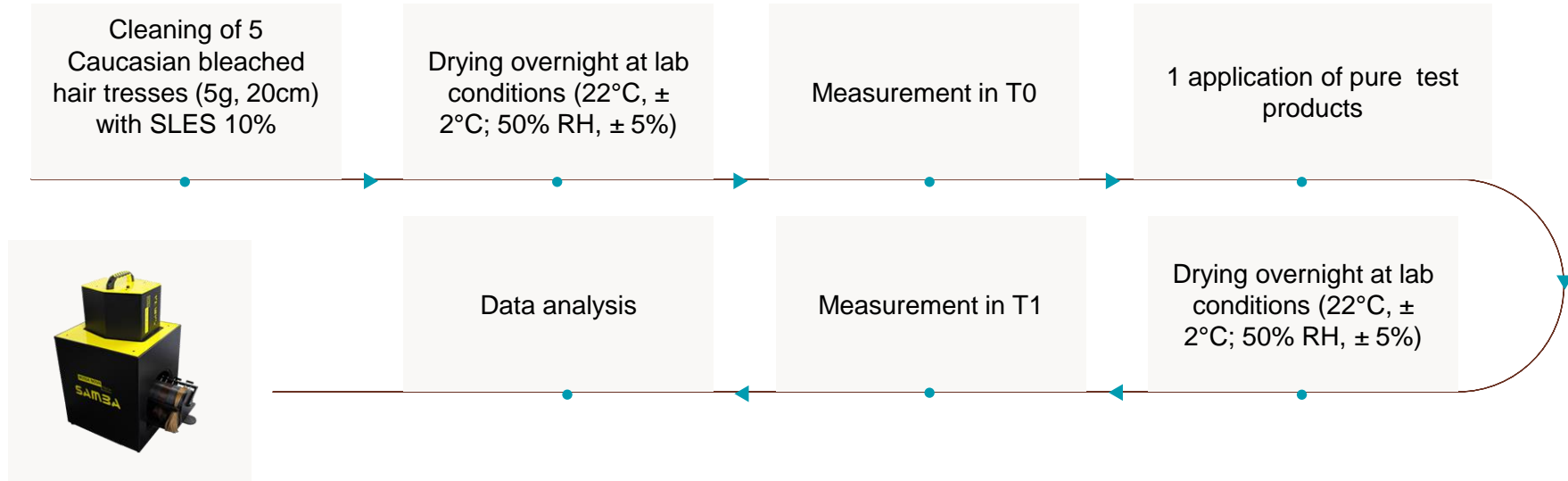


\*p < 0.05, compared to Placebo.

# Luster Protocol



## Protocol Luster Flowchart – Caucasian Hair



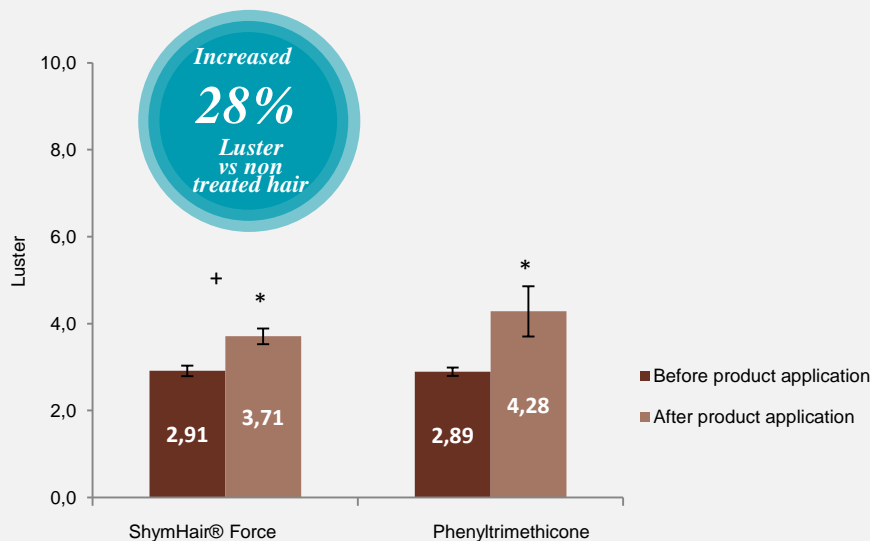
# Luster improvement

## Results



### Bleached Caucasian Hair

#### Pure Ingredient



**Conclusion:**  
SymHair® Force showed a similar performance when compared with Phenyltrimethicone.

**Concepts:**  
Luster, shine, silicone replacement.

SymHair® Force  
1631  
*Pacth Beard!*

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# Beard is the new look

*However, having a full beard can be difficult to achieve*



*Without a doubt, having facial hair is highly in fashion at the moment. Lot of men desire a full beard and they agree beards are sexy.*



54%



41%



36%



44%



51%

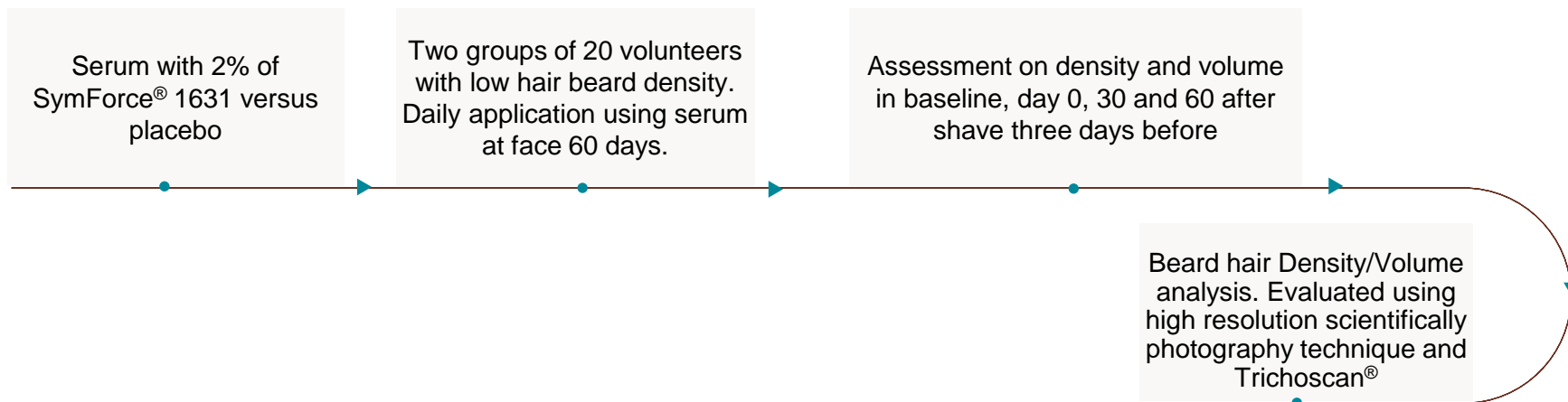


*Of men desire a full beard*

# Beard Enhancement *Clinical Study*



## *Protocol*

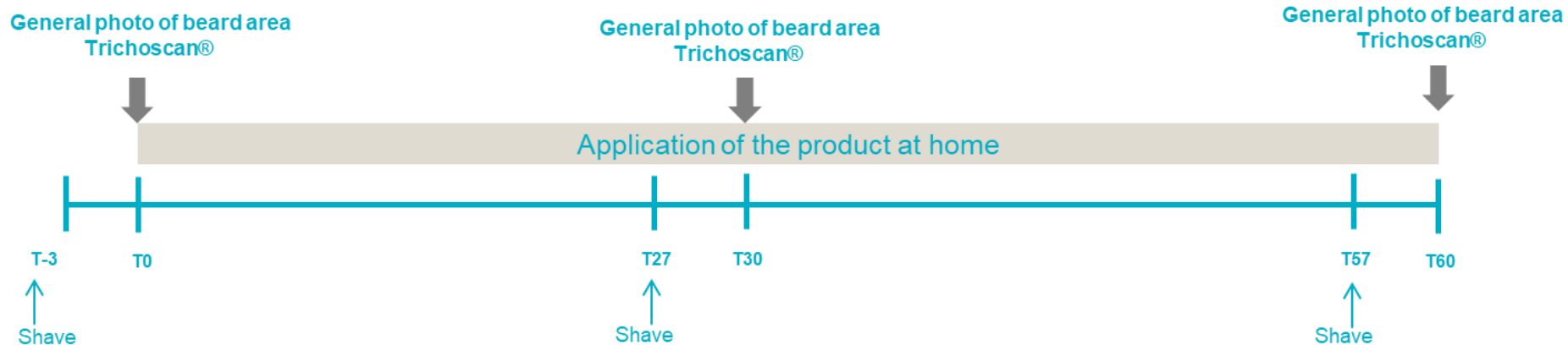


# SymHair<sup>®</sup> Force

## *Patch beard clinical test*



### *Protocol*

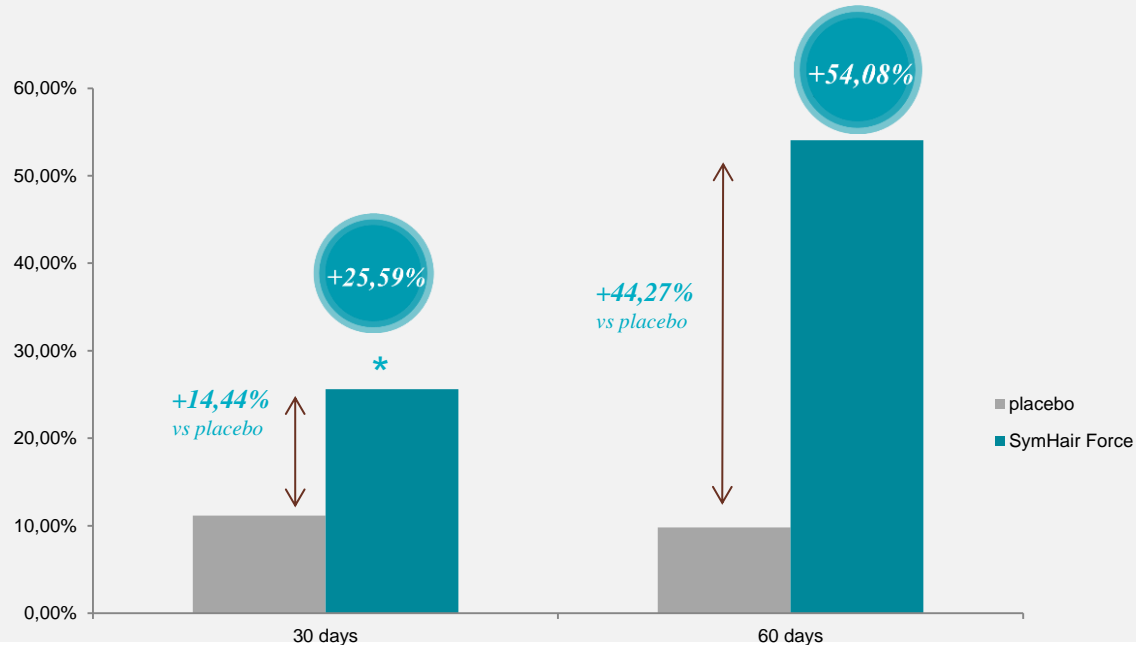


**Beard hair Enhancement Quantification:** Photography and analysis of enhancement performance (growth)

## SymHair® Force

*Hair Density Increase – Clinical Study*

## HAIR DENSITY EVALUATION



Increased  
Up to  
**44%**  
vs  
placebo

**Claims:**  
*Visible result of full beard  
Achieve full beard*

Significance versus Untreated: \*  $p < 0.05$

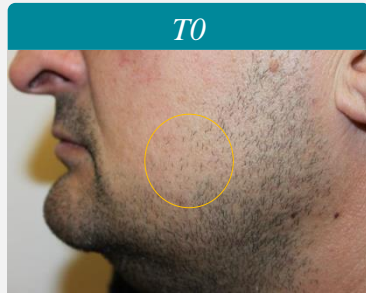


# Increase Beard Density

## Individual Results (Volunteer #19)



### Image Analysis



T0

5 Hairs/0,25cm<sup>2</sup>  
19,89 Hairs/cm<sup>2</sup>



T30

7 Hairs/0,25cm<sup>2</sup>  
27,84 Hairs/cm<sup>2</sup>



T60

10 Hairs/0,25cm<sup>2</sup>  
39,78/cm<sup>2</sup>

**SymHair® Force 1631**  
showed a visible result in  
beard density.

Pictures: Canon EOS 600D

# Increase Beard Density

## *Hair density Increase*



### HAIR DENSITY OF BEARD AREA (TRICHOSCAN)

Volunteer #13



7 Hairs/0,25cm<sup>2</sup>  
27,84 Hairs/cm<sup>2</sup>



10 Hairs/0,25cm<sup>2</sup>  
39,78 Hairs/cm<sup>2</sup>



13 Hairs/0,25cm<sup>2</sup>  
57,71 Hairs/cm<sup>2</sup>

Volunteer #19



5 Hairs/0,25cm<sup>2</sup>  
19,89 Hairs/cm<sup>2</sup>



7 Hairs/0,25cm<sup>2</sup>  
27,84 Hairs/cm<sup>2</sup>



10 Hairs/0,25cm<sup>2</sup>  
39,78 Hairs/cm<sup>2</sup>

**SymHair® Force**  
showed significant increase  
of the beard hair density  
area

SymHair<sup>®</sup> Force  
1631  
*ID Card*



# SymHair® Force 1631

## ID Card



 <p><b>INCI:</b> Pentylene Glycol, Isochrysis Galbana Extract</p>  <p>Product number: 510316 Recommended use level: 1 - 4% pH stability: 4-9</p>		 <p><b>IN 3 MONTHS</b> HAIR APPEARS <b>STRONGER DENSER &amp; MORE VITAL</b></p>	 <p>CLINICALLY PROVEN TO <b>INCREASE HAIR DENSITY</b></p>		
	 <p><b>MICROALGAE FROM THE TAHITIAN SEA</b></p>	 <p><b>ROOT REVITALIZATION</b> <b>VOLUME ENHANCER</b></p>	<p><b>HAIR 82% STRONGER &amp; FALL RESISTANT</b></p>		
<p><b>SUSTAINABLY OBTAINED BY BLUE BIOTECHNOLOGY</b></p>		 <p><b>IECIC LISTED</b></p>	<p><b>MAIN APPLICATIONS</b></p> <ul style="list-style-type: none"><li>• HAIR MASKS</li><li>• HAIR LOTIONS &amp; SERUMS</li><li>• STYLING GELS</li><li>• SHAMPOOS &amp; CONDITIONERS</li><li>• LEAVE ON</li><li>• BEARD OIL AND SERUMS</li></ul>	<p><b>IMPROVES 44% THE BEARD DENSITY</b></p>	<p><b>HAIR MOISTURIZATION AND NUTRITIVE</b></p>

SymHair® Force  
1631  
*Get Inspired!*

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# Incredible Mousse

## Volume Enhancer Mousse

*Incredible Mousse is a luxurious volumizing mousse, with an innovative mechanism, acting as a 360° solution for hair thinning. It reboots the hair cycle, strengthens the hair fiber and increases the hair density.*



**SymHair® Force 1631**



**SymOcide® PS**



# Incredible Mousse

## *Volume Enhancer Mousse*



### 17-CAHST0002.01.01 – MOUSSE IMPROVEMENT VOLUME

Phase	Material Name	EU INCI	% Material	Supplier
A	Aqua/Water	Aqua	80,0	/
A	Fixate™* Design Polymer	Polyacrylate-32	6,0	Lubrizol
A	AMP-Ultra™ PC 2000	Aminomethyl Propanol	0,5	Angus® Chemical
A	<b>SymOcide® PS (510179)</b>	<b>Phenoxyethanol, Decylene Glycol, 1,2-hexanediol</b>	<b>1,0</b>	<b>Symrise</b>
B	<b>Fragrance</b>	<b>Parfum</b>	<b>2,0</b>	<b>Symrise</b>
B	<b>Solubilizer (660352)</b>	<b>Peg-40 Hydrogenated Castor Oil, Trideceth-9, Propylene Glycol, Aqua</b>	<b>2,0</b>	<b>Symrise</b>
C	Propylene Glycol (160221)	Propylene Glycol	0,5	/
C	<b>SymHair® Force 1631 (510316)</b>	<b>Pentylene Glycol, Isochrysis Galbana Extract</b>	<b>2,0</b>	<b>Symrise</b>
	Propane-Butane	Propane, Butane	6,0	/
			<b>100</b>	

#### Production method

##### *Operating Instructions*

1. In a beaker, disperse the Fixate Design Polymer in deionized water under stirring.
2. Add AMP Ultra PC 2000 to neutralize the polymer. Then add the SymOcide® PS and homogenize.
3. Add Phase B (Pre-mixed) in the batch under stirring.
4. Add Phase C and homogenize.
5. Transfer the product to a can and add the propellant.

##### *Specifications*

**pH:** 6.5 – 7.0// **Aspect:** White Liquid

**Fragrance:** 803534

# The Youth Essence

## Aging Defense Serum



*Infuse your hair with the ultimate solution to prevent the main signs of hair premature aging. Specially developed with advanced microalge from Tahiti, this serum targets the **hair loss** in it is very source. The youth essence induces the hair to remain in it is vital phase for longer, revitalizes the root, strengthens the fiber preventing breakage, resulting in a voluminous - healthier looking hair.*





# The Youth Essence

## *Aging Defense Serum*



### 17-CTHST0003.01.01 – HAIR TONIC WITH SYMHAIR FORCE

Phase	Material Name	EU INCI	% Material	Supplier
A	Aqua/Water	Aqua	30,00	/
A	Fixate™ Superhold Polymer	Polyacrylate-2 Crosspolymer	2,00	Lubrizol
A	<b>SymHair® Force 1631 (510316)</b>	<b>Pentylene Glycol, Isochrysis Galbana Extract</b>	<b>4,00</b>	<b>Symrise</b>
B	Ethanol	Alcohol, Aqua	60,49	/
B	<b>SymOcide® PH (973949)</b>	<b>Phenoxyethanol, Hydroxyacetophenone, Caprylyl Glycol, 'Aqua</b>	<b>1,00</b>	<b>Symrise</b>
B	<b>Fragrance</b>	<b>Parfum</b>	<b>2,50</b>	<b>Symrise</b>
C	Sodium Hydroxide 50% solution	Aqua, Sodium Hydroxide	0,01	/
			<b>100</b>	

#### Production method

##### *Operating Instructions*

1. Add the items of Phase A to a beaker and stir until total mixture.
2. In another beaker mix the items of Phase B and stir until total mixture.
3. Add Phase B into Phase A and homogenize.
4. Adjust the pH to 6.50 - 6.80 with Phase C and homogenize.

##### *Specifications*

**pH:** 6.5 – 6.8// **Aspect:** Green Liquid

**Fragrance:** 803534



## The Urban Viking

### *Balm Anti - Patchy Beard*

*Tired of fighting against a patchy beard? This balm is the perfect solution for the modern free-spirited viking who desires to own a full-bush beard.*

*With a microalgae-derived technology that stimulates hair growth and, enriched with a nourishing blend of natural oils, you will finally be able to effortlessly conquer the modern warrior visual.*



# The Urban Viking

## Balm Anti - Patchy Beard



### 17-CLFCE0001.01.01 – BALM FOR BEARD

Phase	Material Name	EU INCI	% Material	Supplier
A	Aqua/Water	Aqua	78,15 /	
A	Edeta® BD	Disodium Edta	0,10	BASF
A	SymDiol® 68 (108580)	1,2-hexanediol Caprylyl Glycol	0,50	SYMRISE
A	SymSave® H (979940)	Hydroxyacetophenone	0,50	SYMRISE
B	Dracorin® GOC (683541)	Glyceryl Oleate Citrate	2,70	SYMRISE
B	SymMollient® S (181598)	Caprylic/Capric Triglyceride		
B		Cetearyl Nonanoate	2,00	SYMRISE
B		Glycine Soja Oil		
B		Gossypium Herbaceum Seed Oil		
B		Mangifera Indica Seed Butter		
B	SymOleo® Vita7(392609)	Olea Europaea Fruit Oil	4,00	SYMRISE
B		Persea Gratissima Oil		
B		Prunus Amygdalus Dulcis (Sweet Almond) Oil		
B		Theobroma Cacao Seed Butter		
B	Isodragol® (660061)	Triisononoin	3,00	SYMRISE
B	Isodipate (660014)	Diisopropyl Adipate	1,80	SYMRISE
B	Carbopol® Ultrez 10 Polymer	Carbomer	0,85	LUBRIZOL
B	Keltrol® CG-SFT	Xanthan Gum	0,20	CP KELCO
C	Sodium Hydroxide 50% solution	Aqua Sodium Hydroxide	0,20	/
D	SymHair® Force 1631 (510316)	Pentylene Glycol Isochrysis Galbana Extract	4,00	SYMRISE
E	Fragrance	Parfum	2,00	SYMRISE
			100	

### Production method

#### Operating Instructions

1. In a beaker, mix all ingredients of Phase A, homogenize and heat up to 75-80°C
2. In another beaker, weigh the Phase B, except Carbopol Ultrez 10 and Keltrol CG-SFT, homogenize and heat up to 75-80°C.
3. Add the Carbopol Ultrez 10 and the Keltrol CG-SFT into Phase B and homogenize with Ultra Turrax until complete dispersion of polymers. Then, add Phase A into Phase B and homogenize using the Ultra Turrax (Model IKA T25 digital - 13000 RPM - 1 min/100g). Start cooling and keep stirring the formulation in mechanical agitator.
4. Add Phase C to adjust pH (6,00 - 6,50) and homogenize (mechanical agitator).
5. Add Phase D into the main beaker and homogenize.
6. Add Phase E into the main beaker and homogenize.

#### Specifications

**pH:** 6.5 – 6.5// **Aspect:** Green Liquid

**Fragrance:** 660575

# Symrise, always inspiring more...

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