



GENENCARE® OSMS BA HAIR CARE

Sales presentation

HEALTHY HAIR TRENDS ARE ON THE RISE IN EUROPE...

THE DESIRE FOR NATURAL INGREDIENTS IN HAIRCARE PRODUCTS IS INCREASING AROUND THE WORLD. CONSUMERS ARE SEEKING OUT MORE INFORMATION ON INGREDIENTS TO FIND ONES THAT ARE IN LINE WITH THEIR GREENER LIFESTYLE CHOICES. HOWEVER, **THEY ARE NOT WILLING TO COMPROMISE PRODUCT EFFICACY FOR AN ALL-NATURAL PRODUCT.**

WOMEN FOCUS ON:

- Reducing frizz/breakage
- Moisturizing
- Scalp health

“ HAIR HEALTH IS BEING TAKEN AS SERIOUSLY AS SKIN HEALTH. ”

40% of women in France Germany and Spain think that natural ingredients in hair care is an indicator of naturalness

Source: Mintel / Euromonitor

...AND IT RESONATES IN THE REST OF THE WORLD

45% of women in Brazil indicate that their hair falls out a lot – this is the most cited hair characteristic among consumers

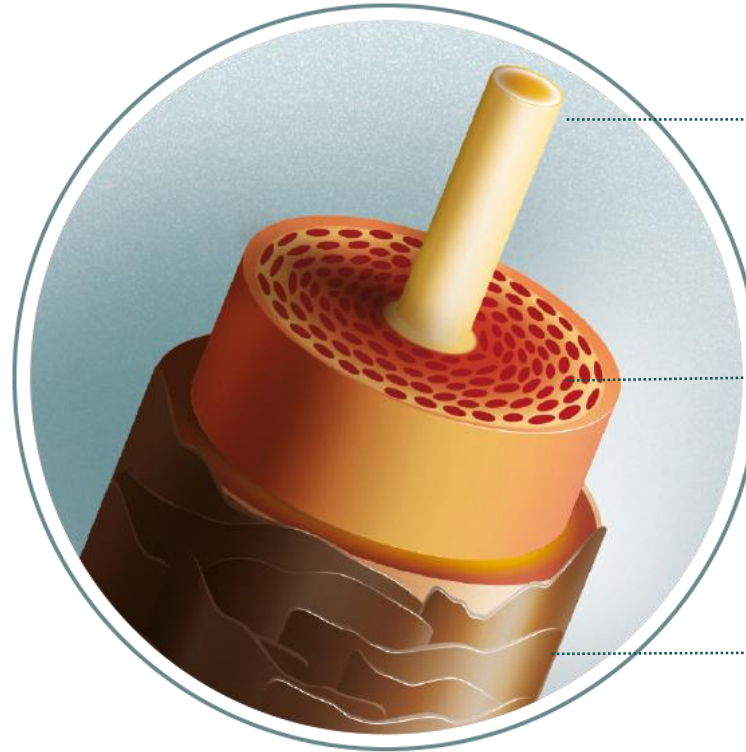
47% of Brazilian ladies use moisturizing and cuticle repair treatments



47% of hair care users in China think it's important that rinse-off shampoo includes botanical or herbal ingredients

5% increase in salon hair care in Korea during 2016 due to consumer concern for hair and scalp health

LET'S START WITH SOME OF THE BASICS OF HAIR STRUCTURE



MEDULLA

- Core of hair
- May even be absent

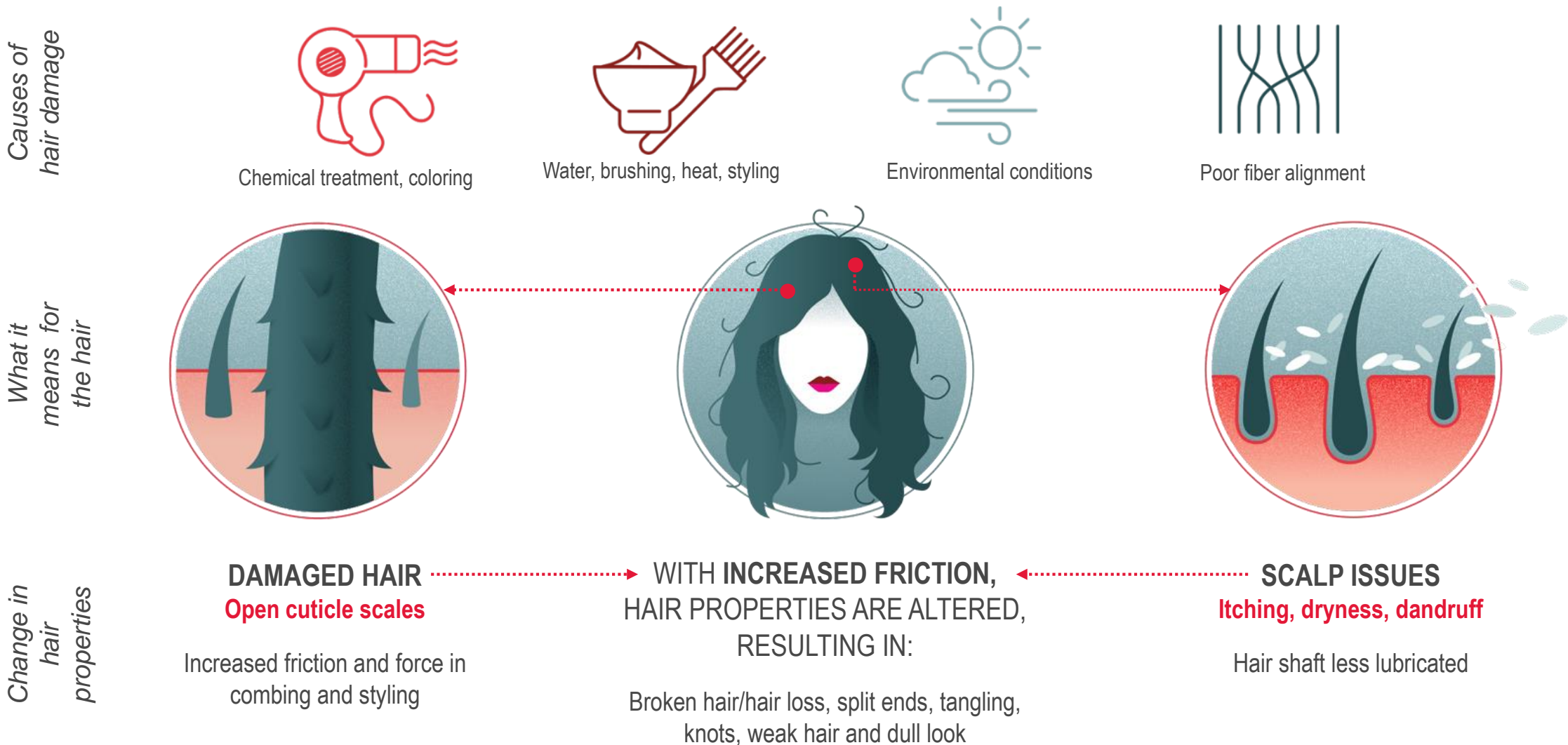
CORTEX

- Contains natural pigment (melanin) and moisture

CUTICLE

- Outer layer of hair shaft (over-lapping keratin cell)
- Works as protective scale
- Cuticle is transparent

HAIR DAMAGE AND SCALP ISSUES INCREASE FRICTION, WHICH NEGATIVELY IMPACTS HAIR PROPERTIES



GENENCARE® OSMS BA PROVIDES STRONGER, HEALTHIER-LOOKING HAIR

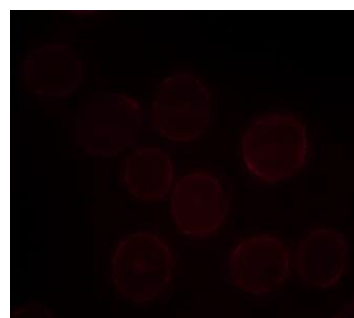
CLAIMS	HELPS IMPROVE HAIR STRENGTH	HELPS IMPROVE HAIR CONDITION	REDUCES THE FRIZZ EFFECT	HELPS PROTECT THE SCALP
MECHANISM OF ACTION	Penetrates to the hair cortex and binds to damages sites.	Deposits on hair surface and binds to damages sites. Hair surface is smoother, resulting in less friction.	Deposits on hair surface and binds to damages sites. Hair fibers are better aligned, resulting in less friction and damage.	Osmoprotection. Strengthens epidermal tight junctions. Mitigates irritation of surfactants.
EFFICACY TEST INSTRUMENTAL & CLINICAL	Scanning fluorescence microscopy. Broken fibers test (hair damaging with T°C and combing cycles).	Scanning fluorescence microscopy. Combability tests.	Scanning fluorescence microscopy. Frizz control test.	TEWL measurements (Transepidermal water loss). Skin patch test.

Most of instrumental tests have been performed on Caucasian, Oriental and Brazilian hair

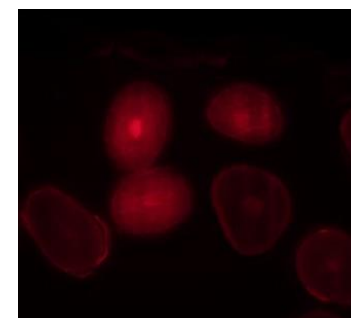
GENENCARE® OSMS BA DEEPLY PENETRATES THE HAIR CORTEX AND HELPS PROTECT THE HAIR AGAINST DAMAGES

Cortical scanning fluorescence microscopy

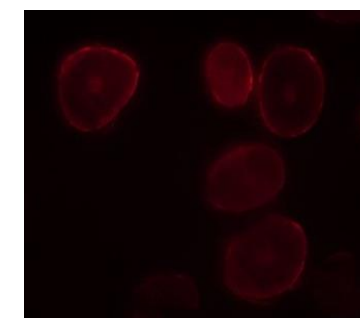
- **Substrate** : virgin caucasian hair
- **Process** :
 1. **Pre-cleaning**
 2. **Shampoo application (treatment)**
 3. **Damage**: 5 cycles of products application and successive combings in automated hair comber. (Total 1000 combing)
 4. **Immersion of hair cross sections** in a fluorescent dye, **Rhodamine B**, to mark the damaged sites of the hair.
 5. **Cortical Scanning Fluorescence microscopy** and measurement of fluorescence intensities.



UNTREATED
VIRGIN HAIR

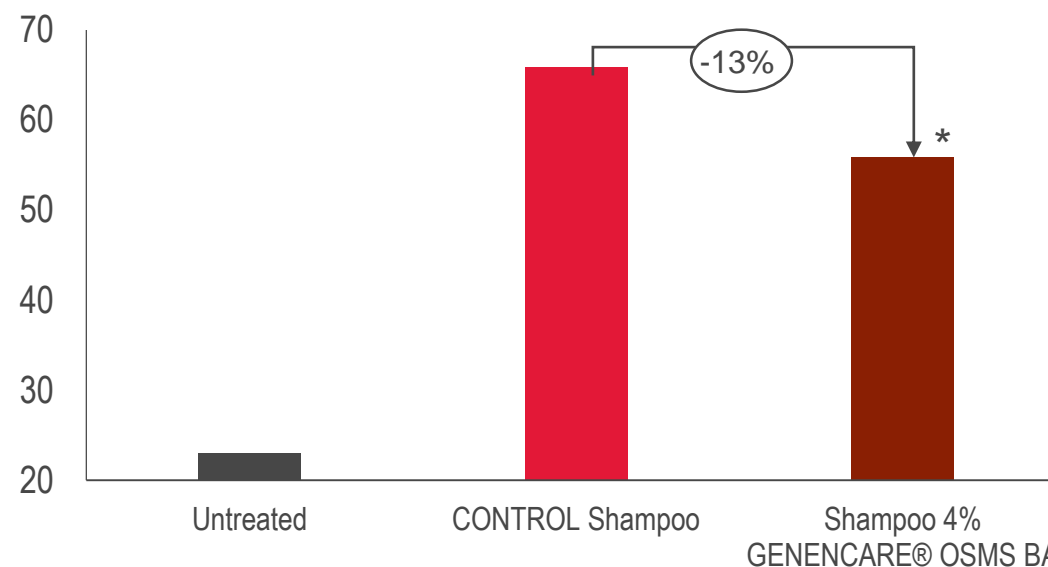


CONTROL SHAMPOO



SHAMPOO 4%
GENENCARE® OSMS BA

Mean fluorescence intensity (a.u.)

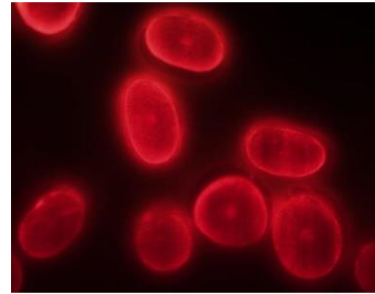


Lower fluorescence intensity = less damage sites

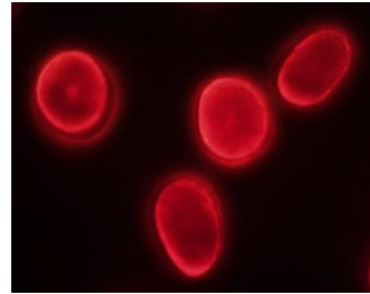
GENENCARE® OSMS BA DEEPLY PENETRATES THE HAIR CORTEX AND REDUCES EXISTING INTERNAL DAMAGE

Cortical scanning fluorescence microscopy

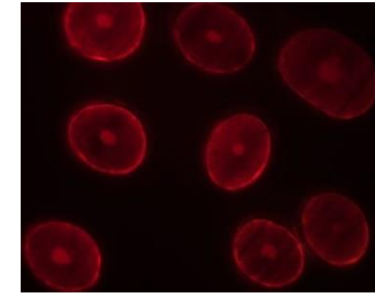
- **Substrate** : double bleached caucasian hair
- **Process** :
 1. Pre-cleaning
 2. Shampoo application (treatment)
 3. Immersion of hair cross sections in a fluorescent dye, **Rhodamine B**, to mark the damaged sites of the hair.
 4. **Cortical Scanning Fluorescence microscopy** and measurement of fluorescence intensities.



UNTREATED
DAMAGED HAIR

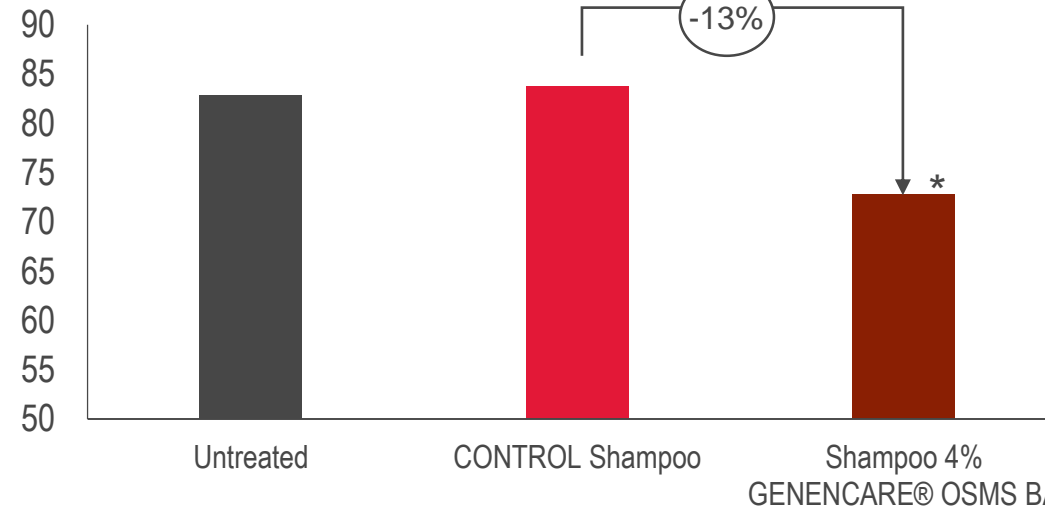


CONTROL SHAMPOO



SHAMPOO 4%
GENENCARE® OSMS BA

Mean fluorescence intensity (a.u.)



Lower fluorescence intensity = less damage sites

GENENCARE® OSMS BA CONTRIBUTES TO MAKING HAIR MORE RESISTANT TO BREAKAGE

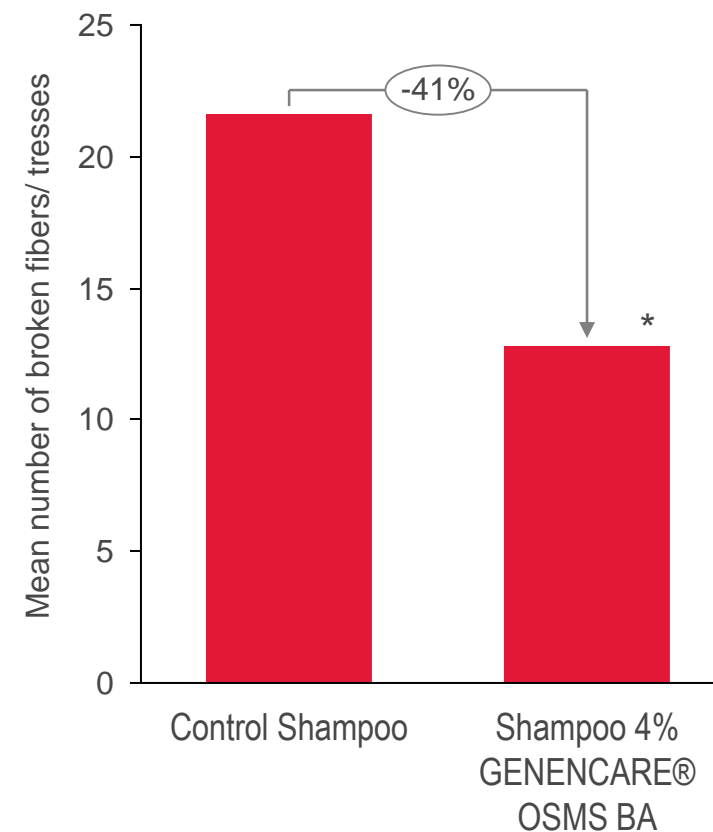
Broken hair test

- **Substrate** : 20 tresses of virgin caucasian hair
- **Process** :
 - Standard pre-cleaning process (wash with 10% SLS solution for 1min)
 - **5 cycles of products application and successive combings**

in Automated hair comber.

1 cycle steps:

1. Temperature set at 40°C, rotating speed set at 25 RPM.
2. Combing time set at 5 min totalling 500 combing operations
3. Temperature is set at 27°C, rotating speed set at 25 RPM
4. Combing time set at 5 min totalling 500 combing operations
5. Tresses were removed from the equipment
6. Number of broken hair fibres counted



* Significant difference (95%) versus control shampoo.

GENENCARE® OSMS BA HELPS REDUCE SPLIT ENDS, MAKING HAIR STRONGER AND MORE RESISTANT TO DAMAGE

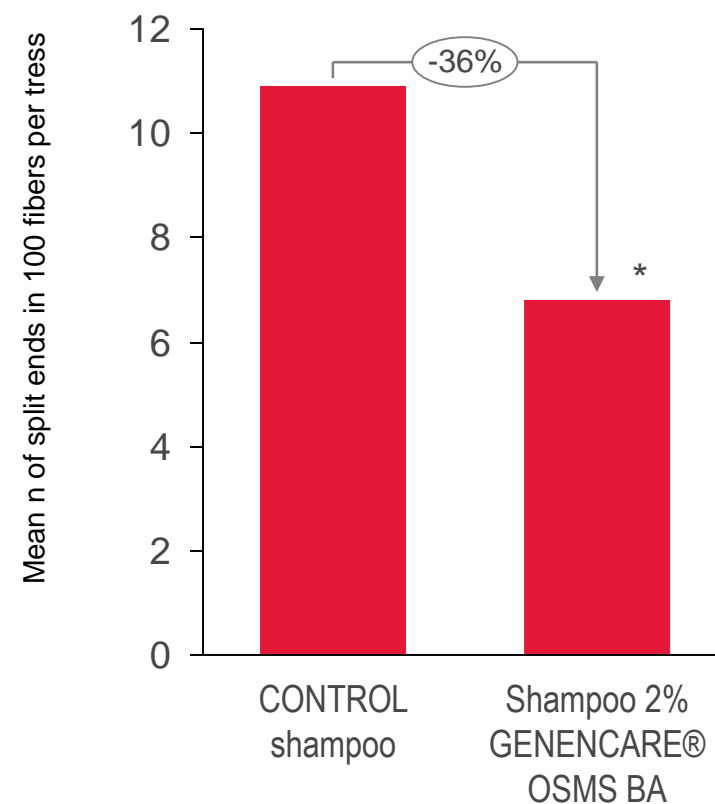
Split ends test

- **Substrate** : 20 tresses of virgin caucasian hair
- **Process** :
 - Standard pre-cleaning process (wash with 10% SLS solution for 1min)
 - **5 cycles of products application and successive combings**

in Automated hair comber.

1 cycle steps:

1. Temperature set at 40°C, rotating speed set at 25 RPM.
2. Combing time set at 5 min totalling 500 combing operations
3. Temperature is set at 27°C, rotating speed set at 25 RPM
4. Combing time set at 5 min totalling 500 combing operations
5. Tresses were removed from the equipment
6. 100 hair fibres were collected and split ends counted



* Significant difference (95%) versus control shampoo.

GENENCARE® OSMS BA STRENGTHENS THE HAIR AND HELPS PROTECT AGAINST HEAT DAMAGE

Tensile Strength test

Shampoo pretreatment

- Control
- 4% GENENCARE™ OSMS BA
- 4 % glycerine
- 10 % glycerine

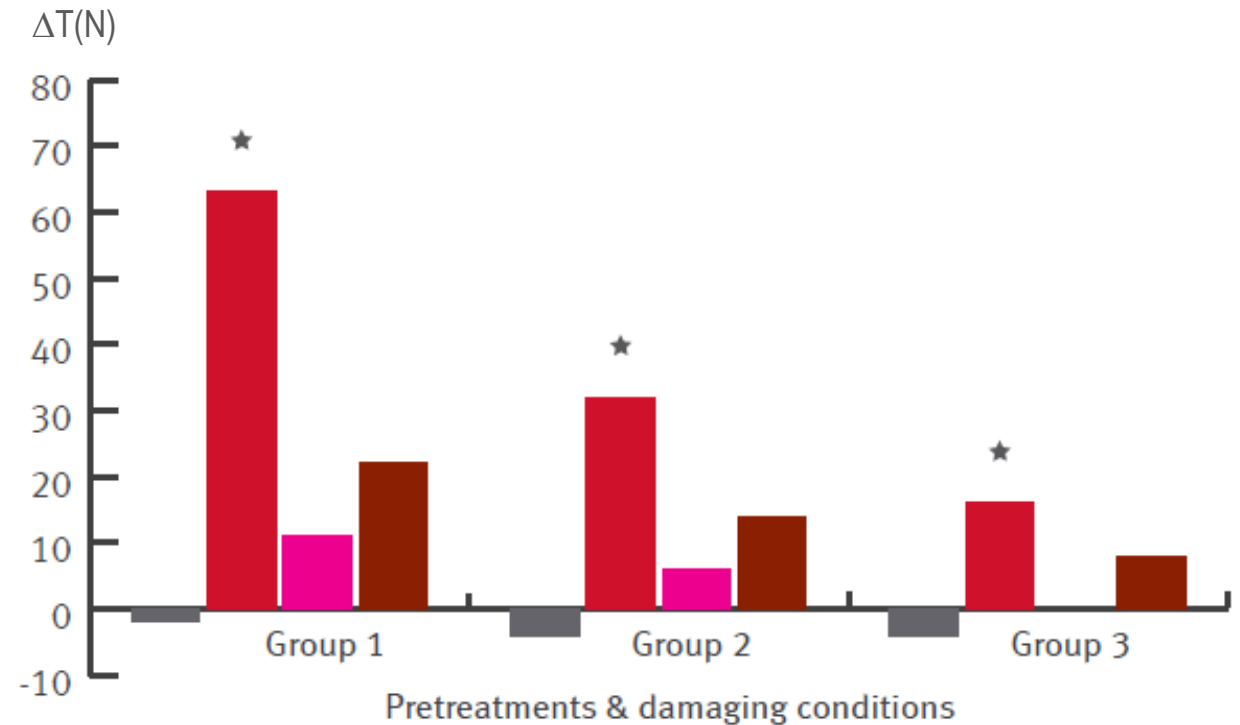
Damage

- Group 1: 4 hours of drying at 32°C under nitrogen and 52% RH
- Group 2: 2 hours of drying at 45°C under nitrogen and 52% RH
- Group 3: 4 hours of drying at 45°C under nitrogen and 52% RH

Evaluation

Tensile strength measurement:

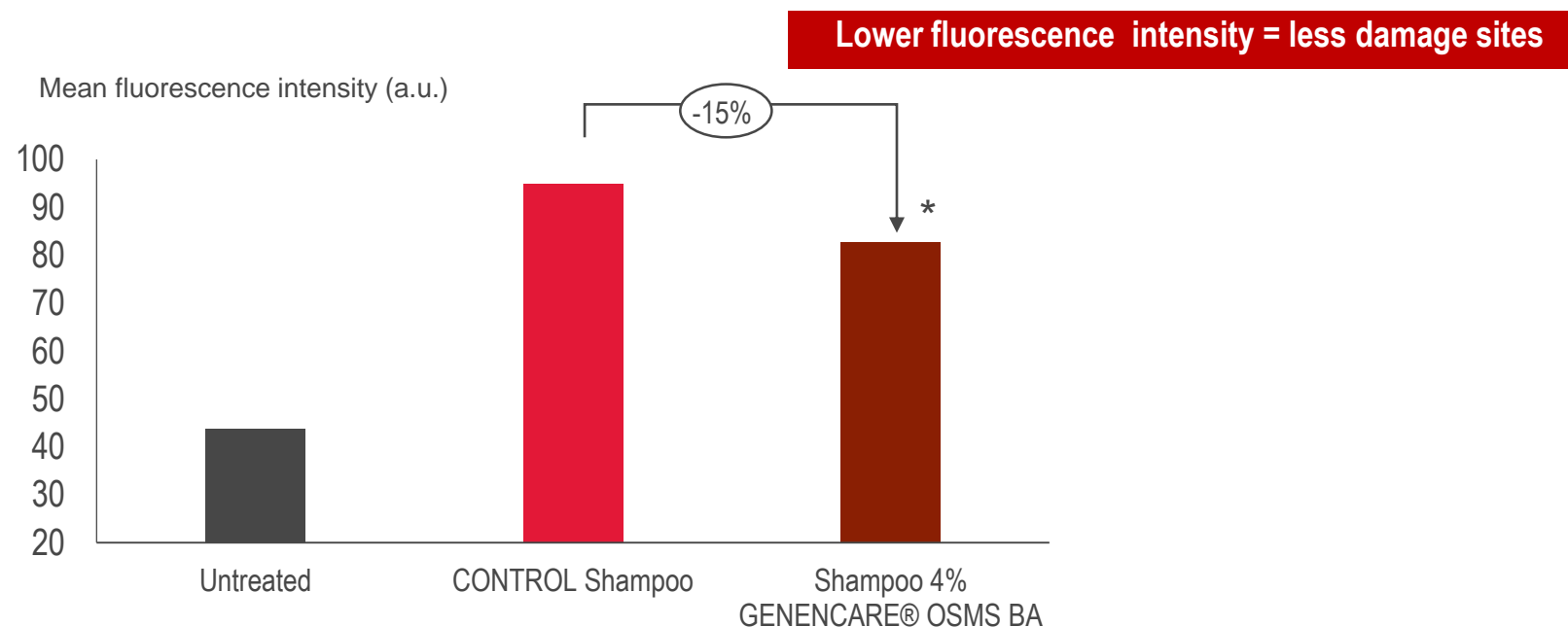
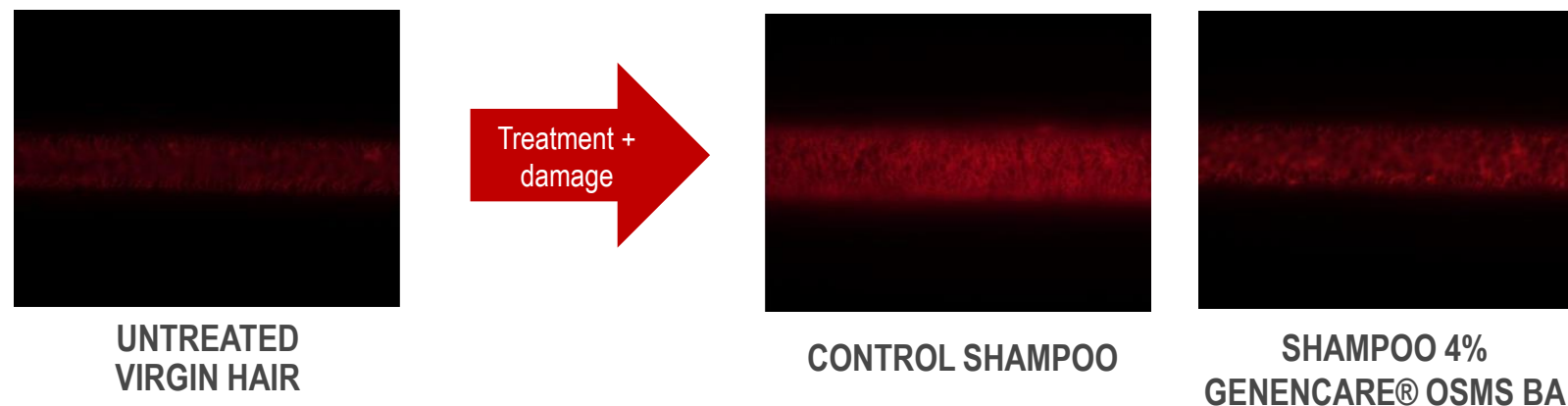
Measurement of the Force (N) ΔT , that must be applied to reach 0.5% hair elongation.



GENENCARE® OSMS BA DEPOSITS ONTO THE HAIR SURFACE, HELPS PROTECT THE HAIR AGAINST DAMAGES AND IMPROVE HAIR CONDITION

Cortical scanning fluorescence microscopy

- **Substrate** : virgin caucasian hair
- **Process** :
 1. Pre-cleaning
 2. Shampoo application (treatment)
 3. **Damage**: 5 cycles of products application and successive combings in automated hair comb. (Total 1000 combing)
 4. **Immersion of hair fibers** in a fluorescent dye, **Rhodamine B**, to mark the damaged sites of the hair.
 5. **Surface Scanning Fluorescence microscopy** and measurement of fluorescence intensities.



GENENCARE® OSMS BA DEPOSITS ONTO THE HAIR SURFACE, REDUCES SURFACE DAMAGE AND IMPROVE HAIR CONDITION

Cortical scanning fluorescence microscopy

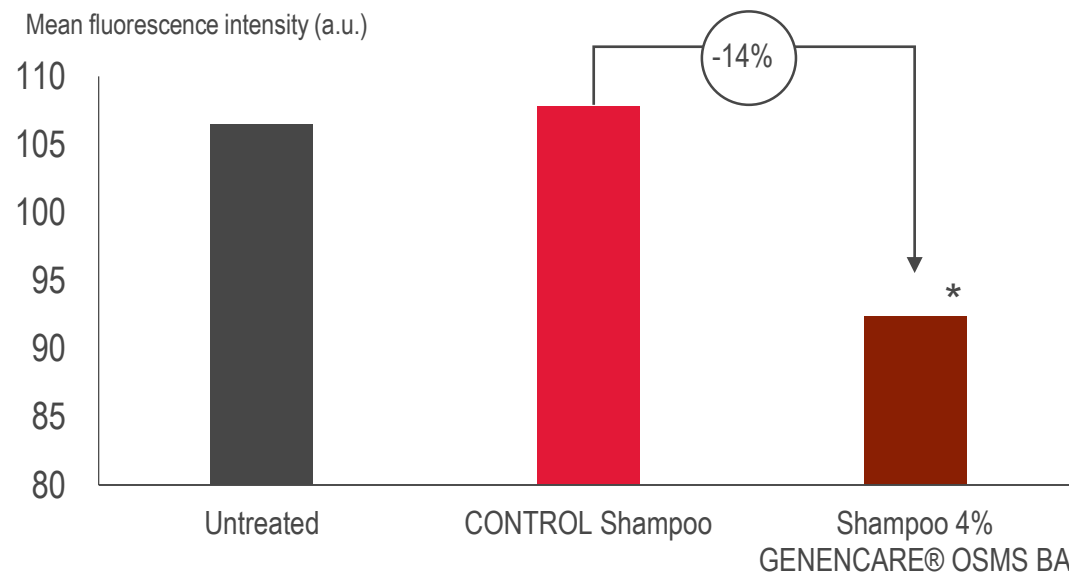
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- **Process** :

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4. **Surface Scanning Fluorescence microscopy** and measurement of fluorescence intensities.



Lower fluorescence intensity = less damage sites



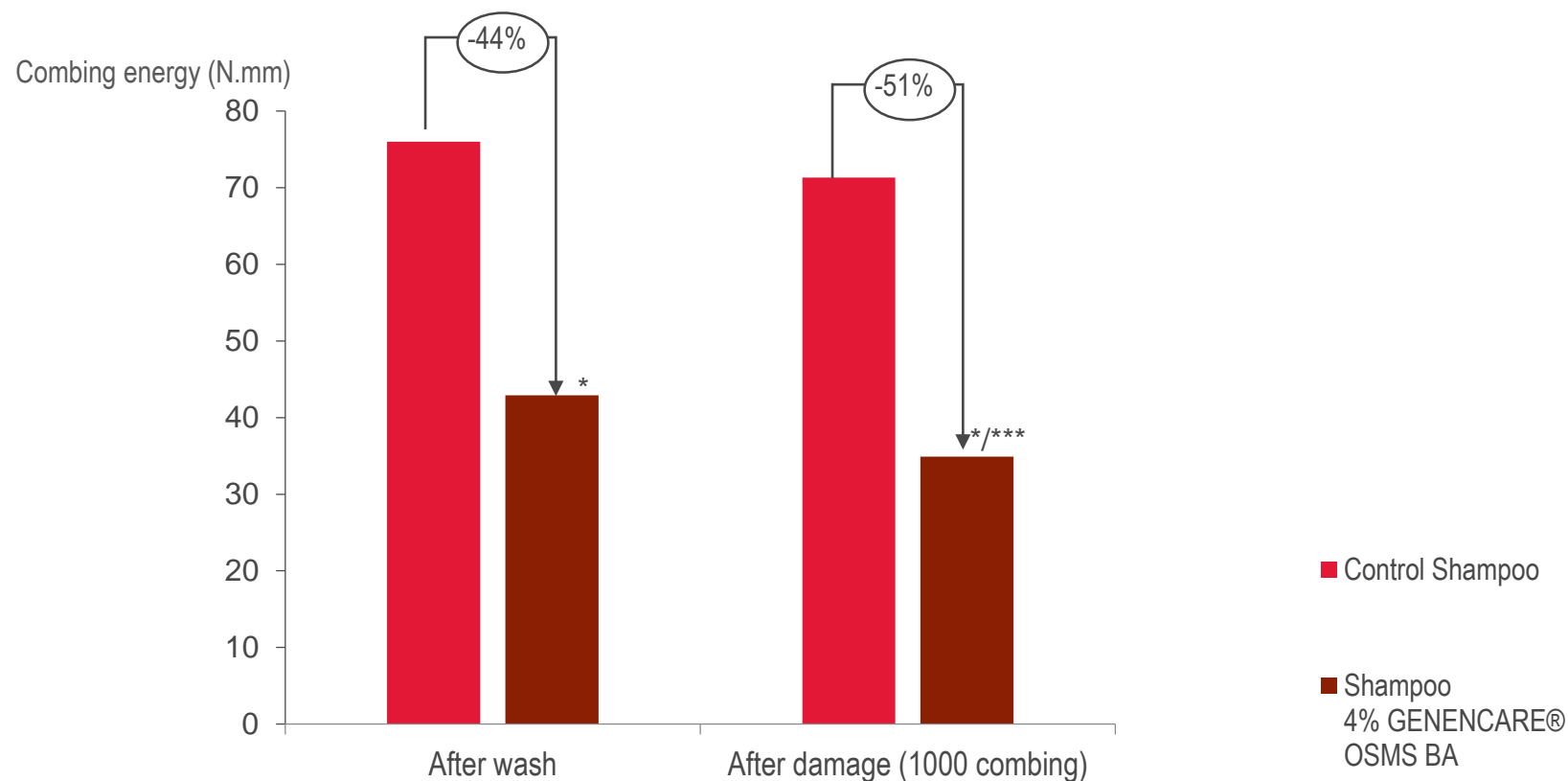
GENENCARE® OSMS BA HELPS IMPROVE WET COMBABILITY OF VIRGIN HAIR BEFORE AND AFTER DAMAGE

Wet combability test

■ **Substrate:** 20 tresses of virgin caucasian hair

■ **Process:**

1. Standard pre-cleaning procedure
2. Baseline combability measurements (wet & dry)
3. Treatment of the tresses by the different shampoo groups
4. "After wash" combability measurements (wet & dry)
5. Damage procedure by 1000 successive combings
6. "After damage" : combability measurements (wet & dry)



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* Significant difference (95%) from control

*** Significant difference (95%) «After damage» versus «After wash»

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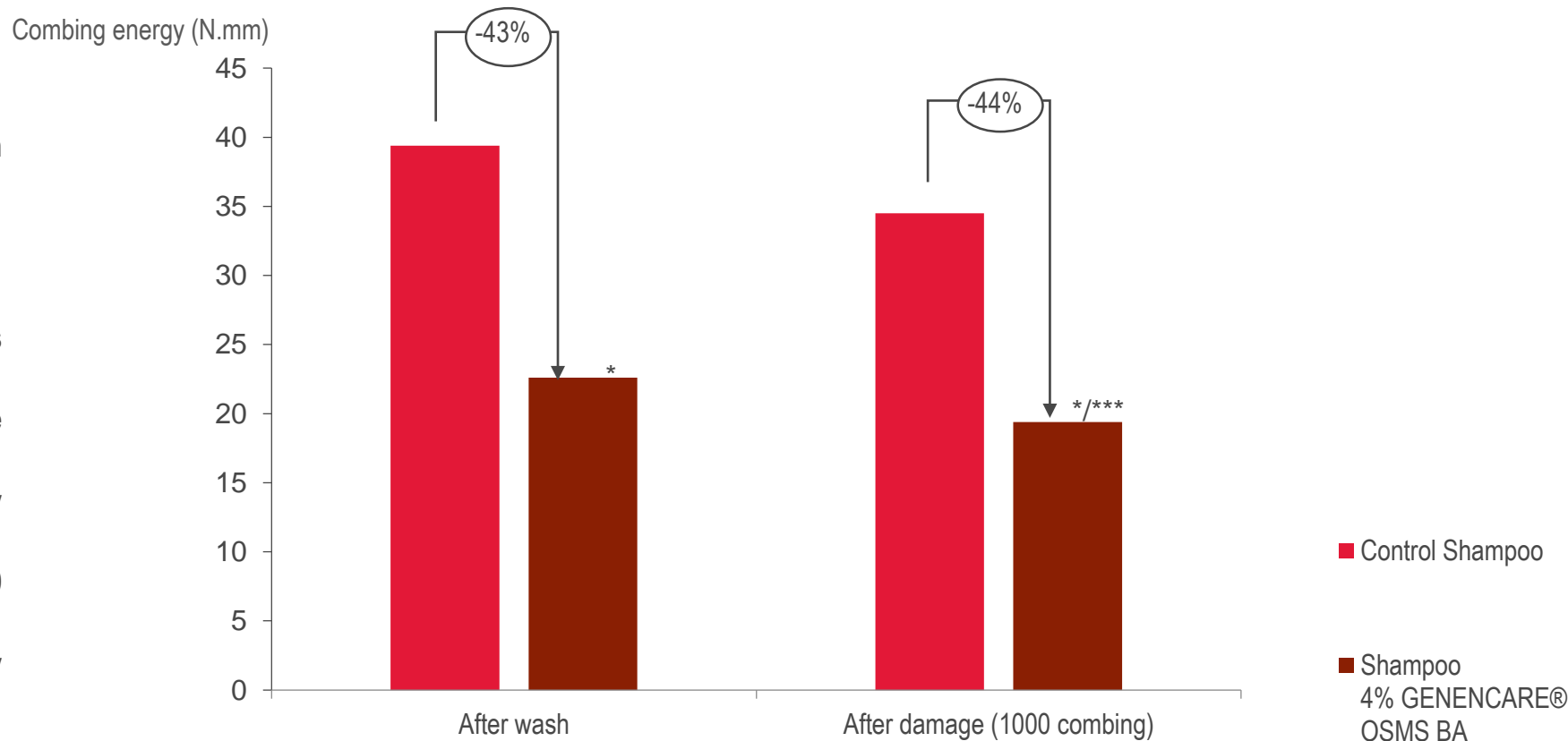
GENENCARE® OSMS BA ALSO HELPS IMPROVE DRY COMBABILITY OF VIRGIN HAIR BEFORE AND AFTER DAMAGE

Dry combability test

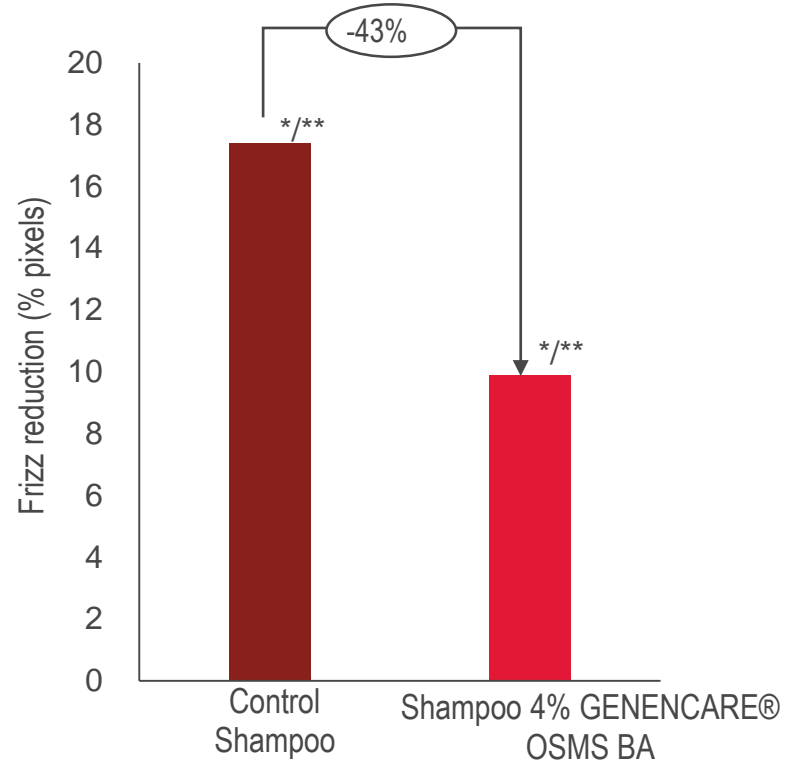
■ **Substrate:** 20 tresses of virgin caucasian hair

■ **Process:**

1. Standard pre-cleaning procedure
2. Baseline combability measurements (wet & dry)
3. Treatment of the tresses by the different shampoo groups
4. "After wash" combability measurements (wet & dry)
5. Damage procedure by 1000 successive combings
6. "After damage" : combability measurements (wet & dry)



GENENCARE® OSMS BA HELPS REDUCE FRIZZ. HAIR FIBERS ARE BETTER ALIGNED PROVIDING A HEALTHIER HAIR LOOK.



Caucasian hair washed by shampoo with 4% GENENCARE® OSMS BA shows **significant reduction in frizz** compared to control shampoo when the hair is exposed to a humid environment.



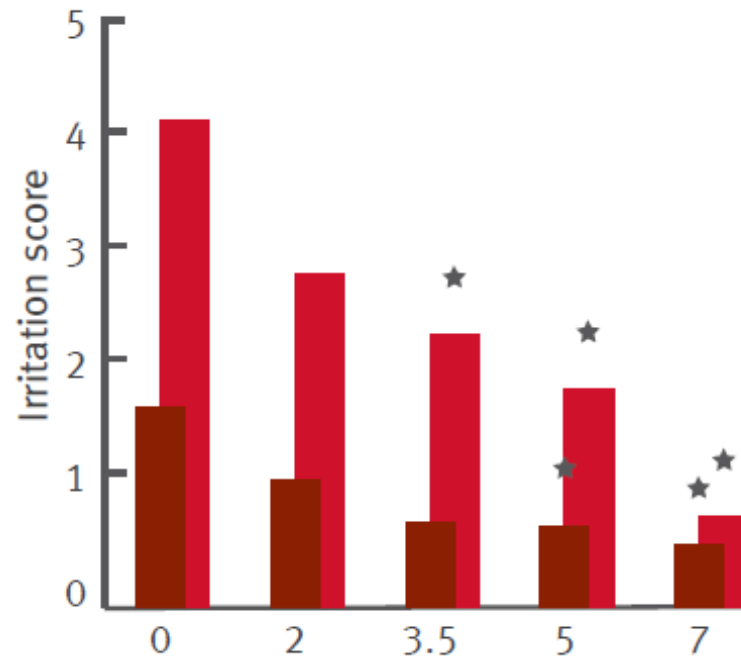
Hair fibers are better aligned, providing consumers the perception of shinier hair.

GENENCARE® OSMS BA REDUCES THE IRRITATING EFFECT OF SLES

Clinical patch test

- 25 volunteers
- 24 H and 48 h occlusive patch on human volar forearms
- SLES (10 % solution) + GENENCARE® OSMS at several percentages 0, 2, 3.5, 5, 7%
- Clinical evaluation of the irritation score

■ 24h
■ 48h

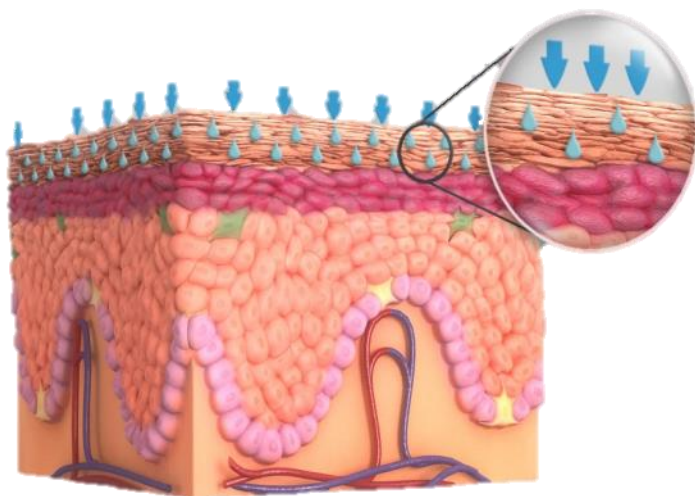


- The addition of GENENCARE® OSMS BA at level over 3.5% produced a significant reduction in the irritation potential of SLES.
- This effect is dose-dependent

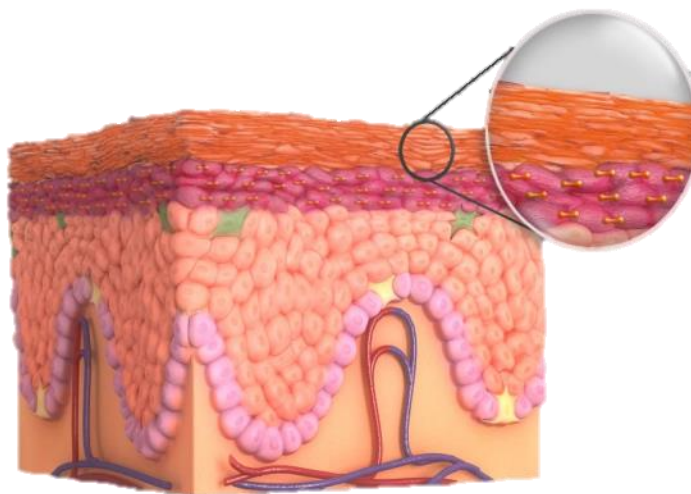
** $p < 0.05$, Significant differences compared to SLES 10% solution without betaine; based on Fixed Effect LS Means Turkey HSD*

Source: Toxicol laboratories, Ltd, Test Ref V3-V10-8811 (1988)

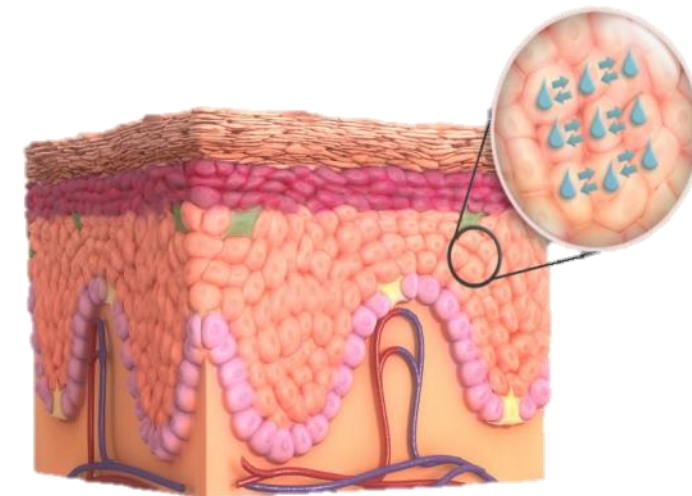
GENENCARE® OSMS BA CONTRIBUTES TO SKIN MOISTURIZATION THROUGH HUMECTANCY, OSMOPROTECTION AND BY STRENGTHENING THE SKIN BARRIER



- Water binding properties
- **Humectancy** at the skin surface
- Increase of the stratum corneum moisture content and elasticity



- Improves Tight Junctions integrity in stratum granulosum⁽¹⁾
- **Strengthens** skin barrier and prevents water loss



- Regulates cell water balance
- **Osmoprotection** ^{(2) (3) (4) (5) (6)}

¹ Putaala & al 2010

² K. Tiihonen unpublished

⁴ Janake et al 2003

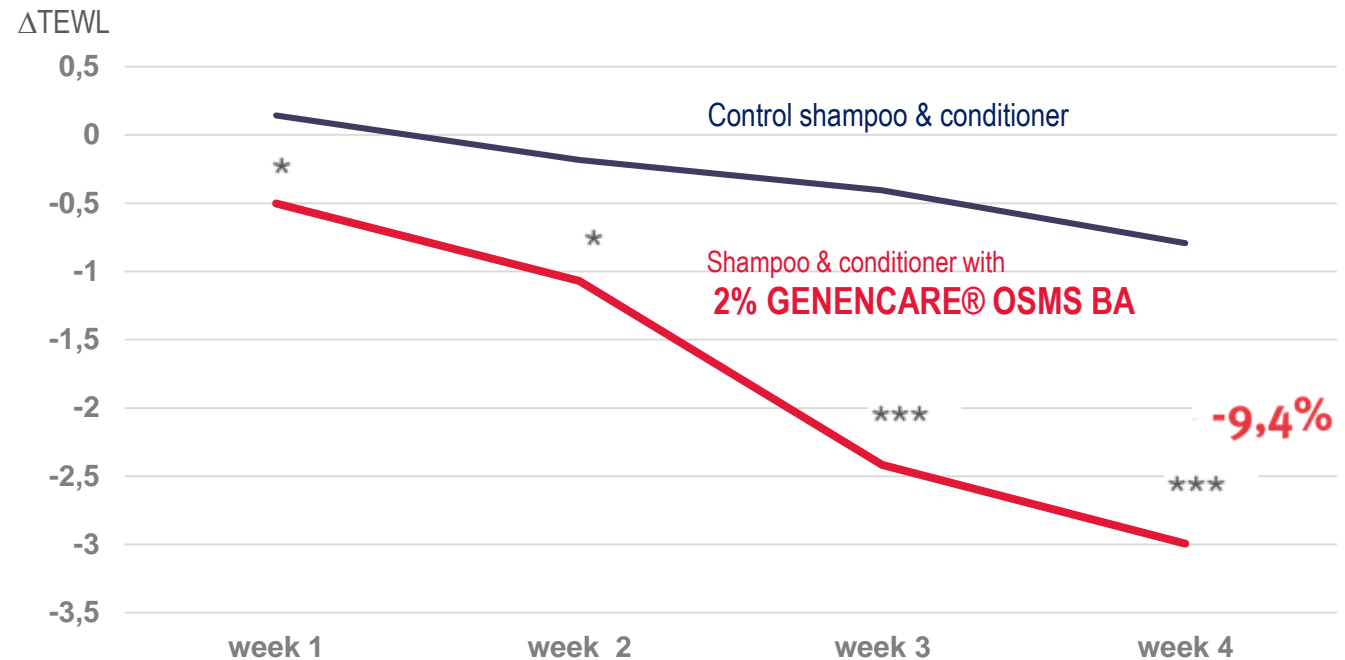
⁵ Warskulat et al 2004, 2007

⁶ Warskulat et al. 2008

GENENCARE® OSMS BA HELPS IMPROVE THE SCALP BARRIER INTEGRITY

4 weeks clinical study

- 39 Brazilian volunteers (research subjects)
- Dry and sensitive scalp (itchiness)
- Wavy & dry hair
- Mean age: 45 ± 8 years.
- Half head application of a duo of products each containing 2% GENENCARE® OSMS BA (shampoo + conditioner)
- Duo A versus duo B (randomized)
- First application in salon, then home-use with weekly visit to the institute.
- Product application frequency: 3 times a week, 4 weeks



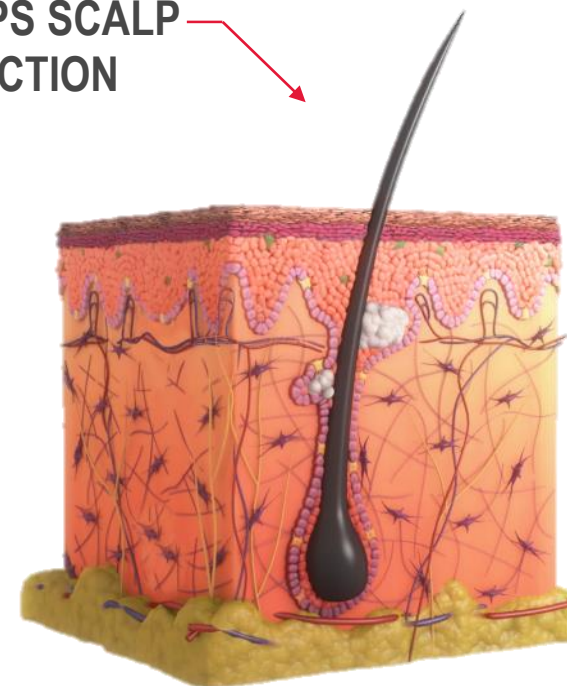
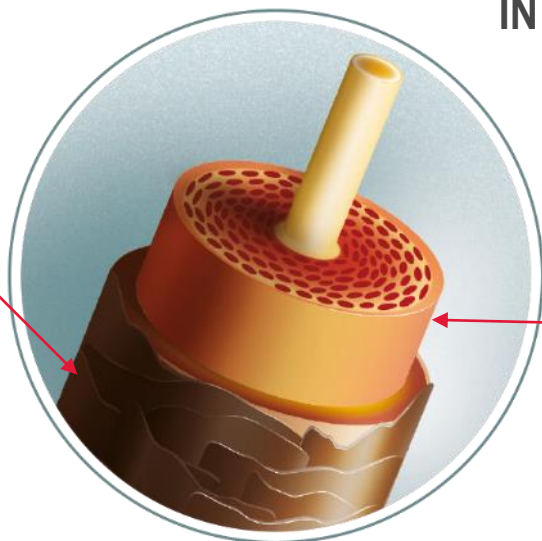
Difference of TEWL values compared to the measurement at week 0.
Increasing differences indicate TEWL measurements lower than those at week 0.

IN SUMMARY, GENENCARE® OSMS BA HELPS PROTECT AND CARE FOR HAIR AND SCALP

1. HAIR SURFACE DEPOSITION

2. DEEP PENETRATION INTO HAIR CORTEX

3. HELPS SCALP PROTECTION



1
Smoother hair surface

2
Reduction of combing forces and frizz effect

3
Reduction of hair friction

4
Less hair damage/hair stronger

5
Better alignment of hair fibers

6
Increased shine

1

PROTECTION:

Mitigates the irritation of surfactants

2

BARRIER STRENGTHENING:

Helps reinforcing keratinocytes' Tight junctions.

3

MOISTURIZATION:

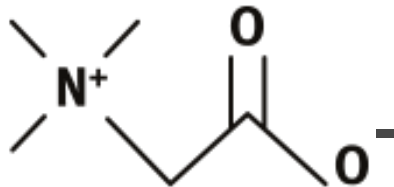
Helps reinforcing keratinocytes' Tight junctions.

RESULT: PERCEPTION OF HEALTHY LOOKING HAIR

RESULT: HELPS IMPROVING SCALP HEALTH

GENENCARE® OSMS BA HAS GREEN CREDENTIALS

- TRIMETHYLGLYCINE
- HIGHLY PURIFIED SUGAR BEET EXTRACT
- 100% NATURAL SKIN CARE AND HAIR CARE ACTIVE
- OSMOPROTECTANT



Betaine



COSMOS
APPROVED



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