



AlphaImprove 4D Hair

The Evolution in Hair Treatment!

www.citroleogroup.com





Why Choose AlphaImprove 4D Hair?

AlphaImprove 4D Hair is a **100% natural** active ingredient with **efficacy tests** that prove its action on hair from the inside out, being a complete active ingredient for various applications and treatments.

In addition to having numerous benefits, AlphaImprove 4D Hair is a **vegan active**, without **testing on animals** and with a **sustainable production chain** committed to preserving nature.

The power of nature in your hair!





● ● ● Benefits of AlphaImprove 4D Hair

- Increased Shine
- Heat Protection
- Volume and Frizz Control
- Deep Hydration
- Promotes softness in the hair
- Replacement of Cortical Mass
- Restoration of the Cuticle and improvement of the hair surface
- Formation of a natural film along the hair strands
- Does not leave residue on the hair



Efficacy Tests

AlphaImprove 4D Hair





Dermatological Evaluation of Primary and Accumulated Dermal Irritability

60 volunteers: Men and Women - 19 to 65 years old

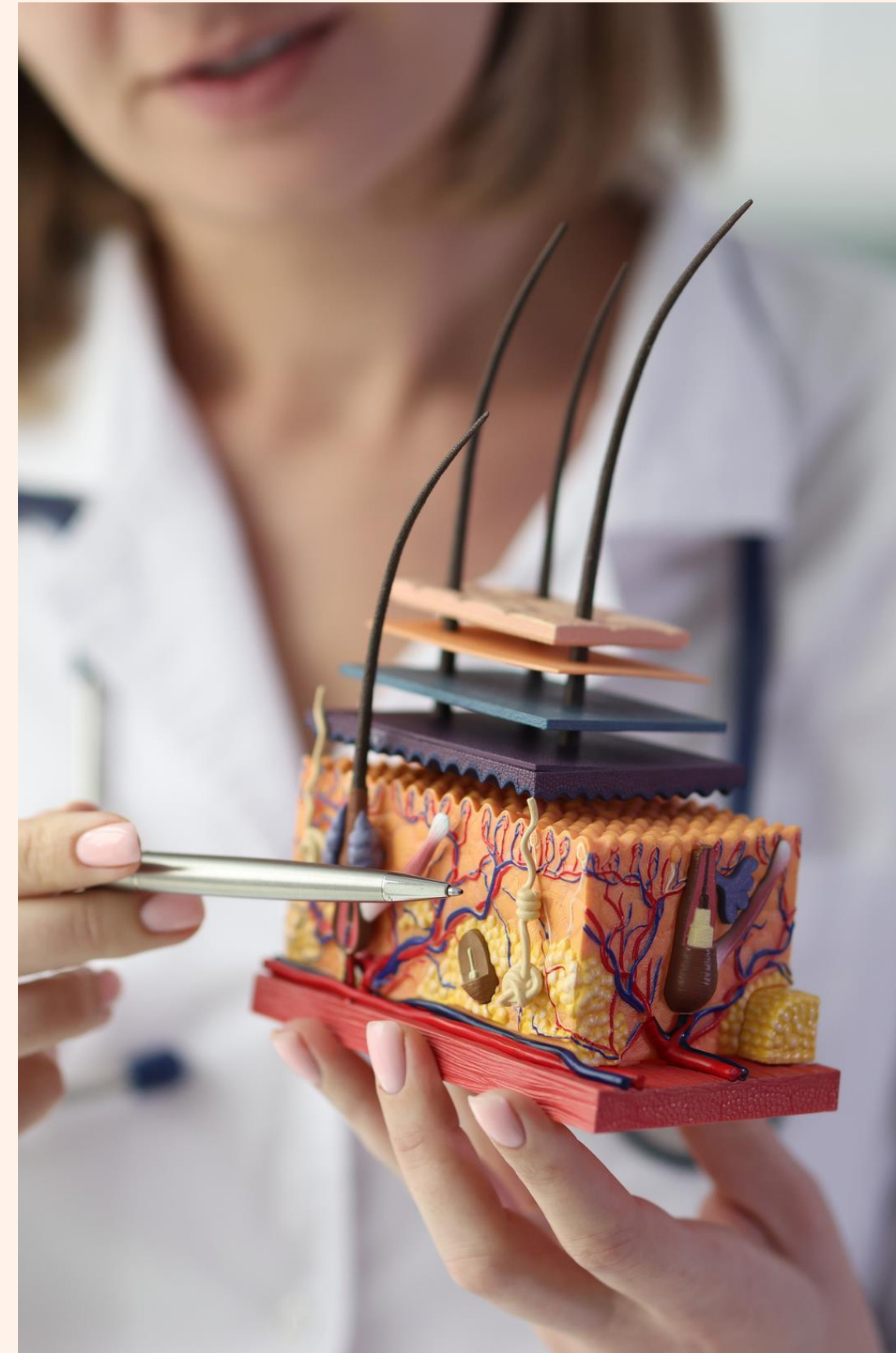
Phototypes: I to IV

6 weeks of evaluation

7% AlphaImprove 4D Hair

Volunteers were evaluated by a dermatologist regarding sensation of discomfort and clinical signs

Dermatologically Tested



Security



Frizz and Volume Control Evaluation

1,5% AlphaImprove 4D Hair - Shampoo

Methodology: Hair strands were washed with a shampoo containing AlphaImprove 4D Hair. After washing, the strands were combed and hung to dry naturally. The same was done for the control group.

Image processing using image analysis software to measure Volume and Frizz



Volume and
Frizz

Frizz and Volume Control



Control Group

27% Frizz Control*

T-Test was performed to compare the means ($p>0.05$)
**T-Test was performed to compare the means ($p>0.10$)

79% Volume Reduction**

Group with AlphaImprove 4D Hair



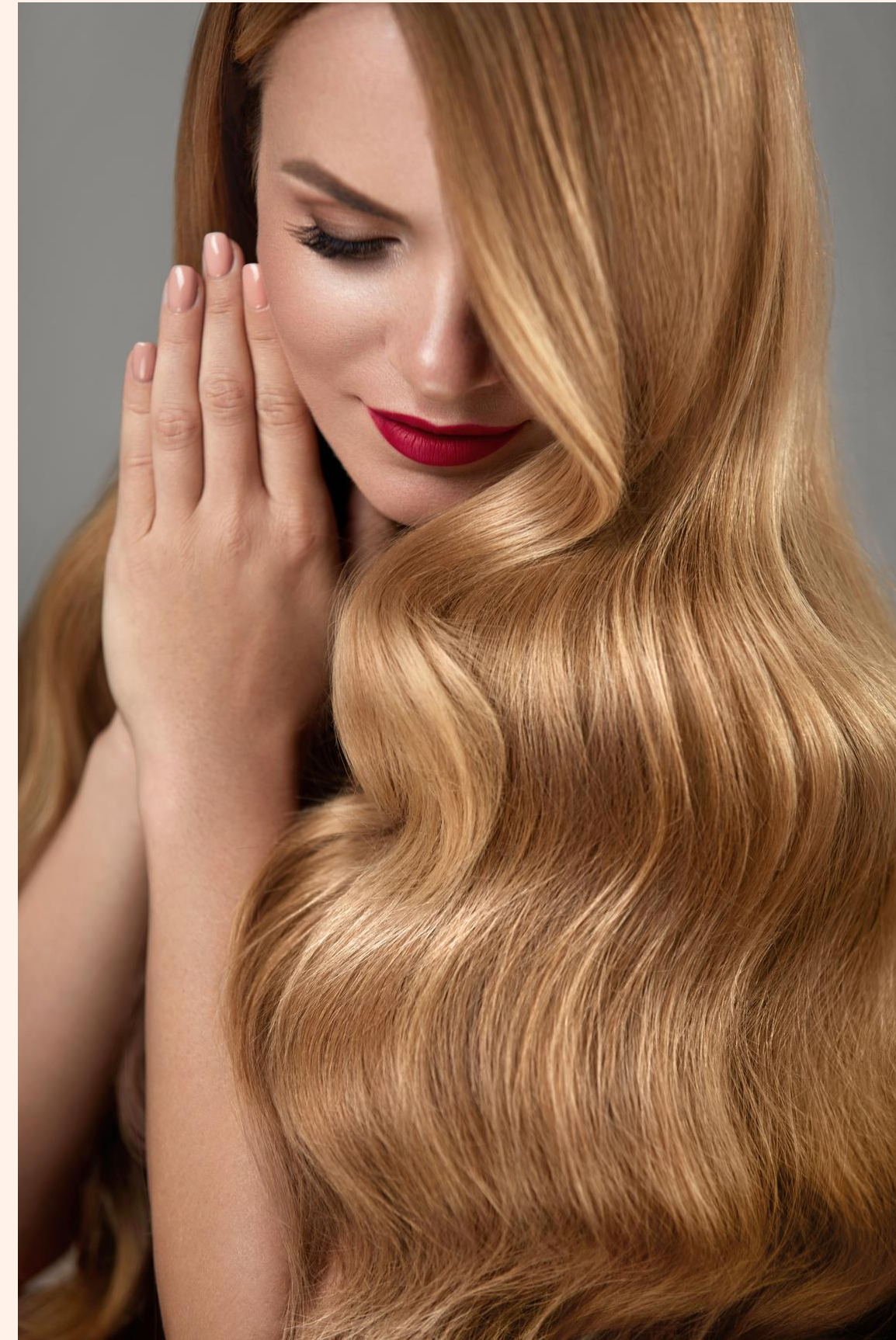


Hair Shine Evaluation - Glossmeter

2,0% Alphalimprove 4D Hair - Leave In

Methodology: Evaluation of two groups of strands, one treated with Alphalimprove 4D Hair after 24 hours of treatment drying in a controlled environment

10 consecutive measurements were made using the Glossmeter[®] equipment to measure the shine of the strands.



Shine

Understanding the Technique

Glossmeter® is a tool that measures the shine of surfaces including hair.

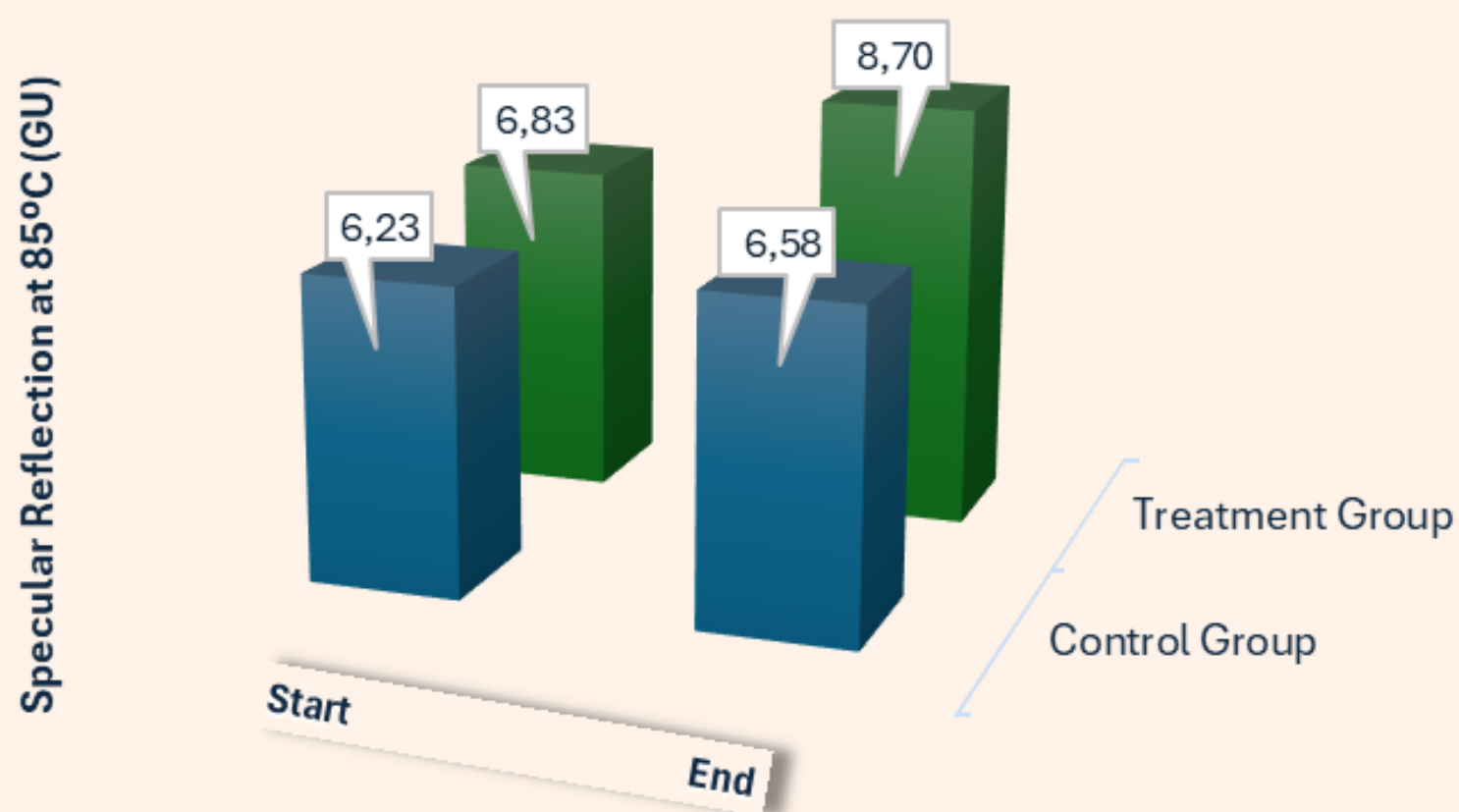
Principle of Technique

- Measurement of the intensity of reflected light at different angles
- Uses reference standards with known refractive indices
- Hair shine is related to the alignment of the cuticles; the more aligned the cuticles, the more shine the hair will have





- Analysis of strands at T0 and after 24h with Alphalmprove 4D Hair
- Specular Reflection Measurements in Brightness Units (GU)



**Alphalmprove 4D Hair
increased hair shine
by 32%**

* T-Test was conducted to compare the means ($p > 0.05$)



Evaluation of Thermal Protection in Hair

2,0% Alphalmprove 4D Hair - Leave In

Methodology: Two groups of strands were evaluated using the DSC (Differential Scanning Calorimetry) technique after being cleaned and undergoing thermal damage.

Heat Damage: A 5 minutes blow drying followed by flat iron at 230°C, 10 times 10 seconds each from the roots to the ends of the hair



Thermal Protection

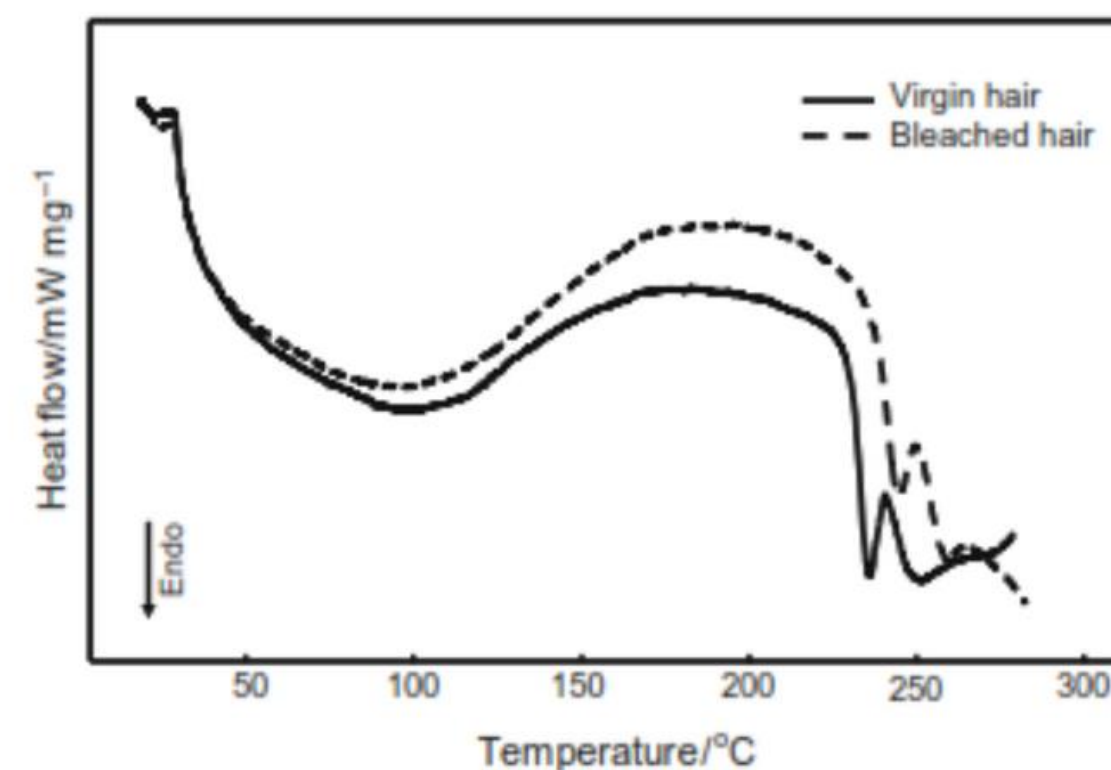


Understanding the Technique

DSC is a thermal analysis technique that generates heat variations in the evaluated material, allowing physical/chemical changes to be verified as a function of temperature.

In hair analysis it is possible to observe

- Water evaporation at around 100°C
- Alpha-Keratin denaturation - 230°C
- Cystine decomposition - 250°C

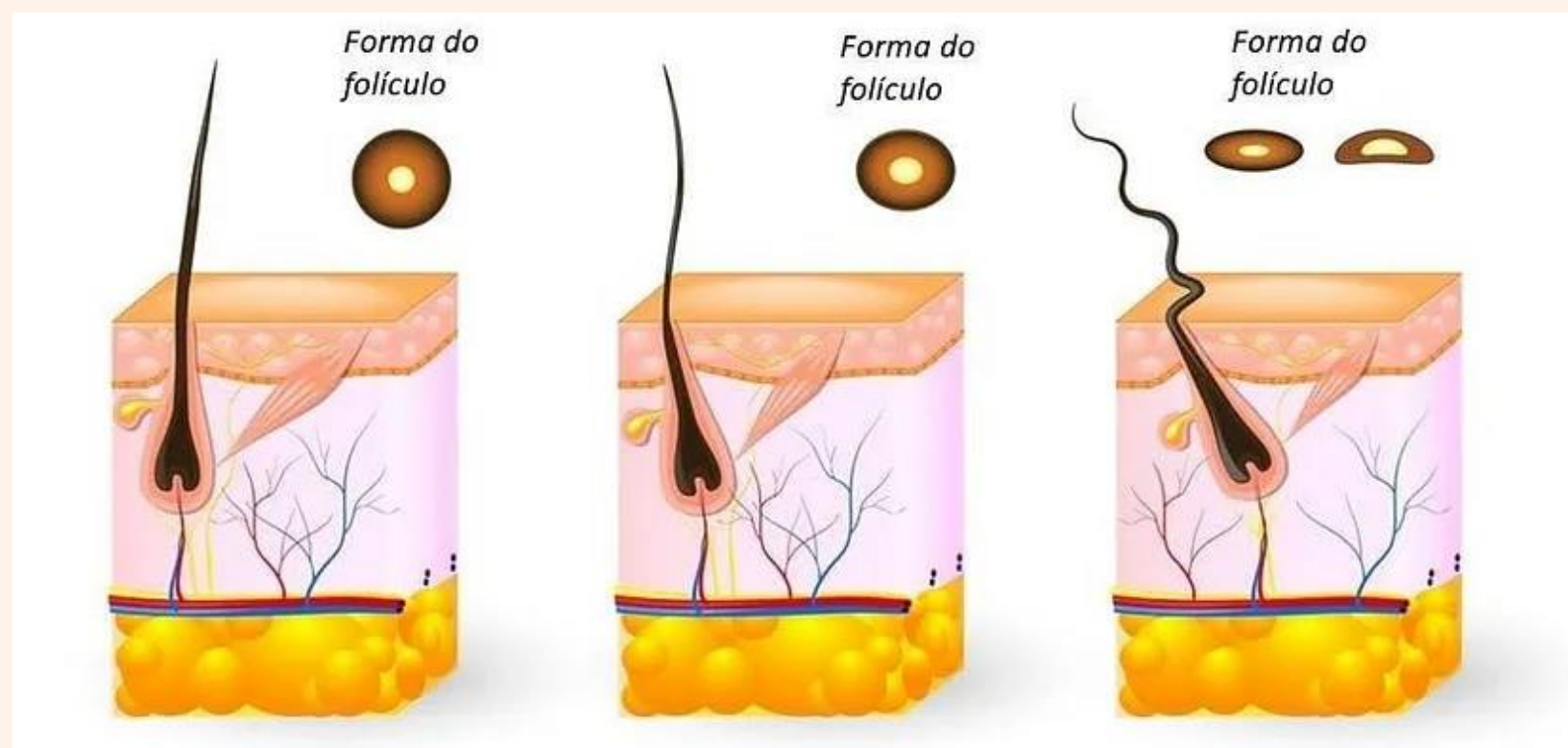


Typical graph obtained from a DSC analysis



Understanding Heat Damage

Hair is a keratinized filament that has in its composition several proteins and amino acids responsible for the curvature and structure of the hair.



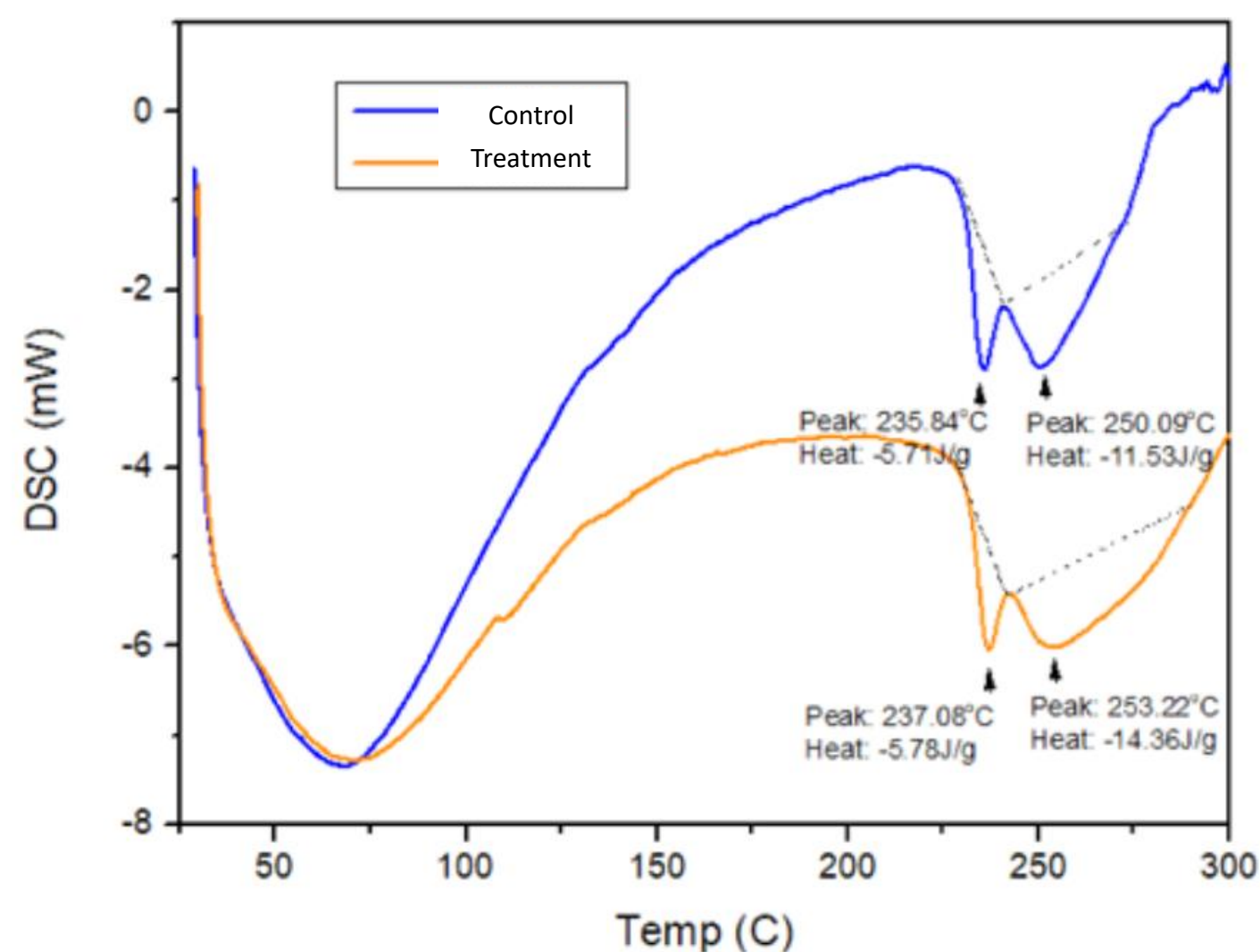
The hair structure is formed by several chemical bonds such as sulfur bridges, formation of cystine and other proteins.

The application of temperature (230°C) to the strands promotes the evaporation of water which leads to the breaking of sulfur bridges, facilitating the keratin denaturation process which affects the mechanical properties of the hair.



With the use of AlphaImprove 4D Hair

- Higher temperatures for denaturation of Alpha-Keratin and degradation of Cystine
- Higher enthalpy values indicating that the product provides greater protection to the fiber after thermal damage



**AlphaImprove 4D Hair
provided 49% more
Thermal Protection**



Cuticular Restoration Scanning Electron Microscopy (SEM)

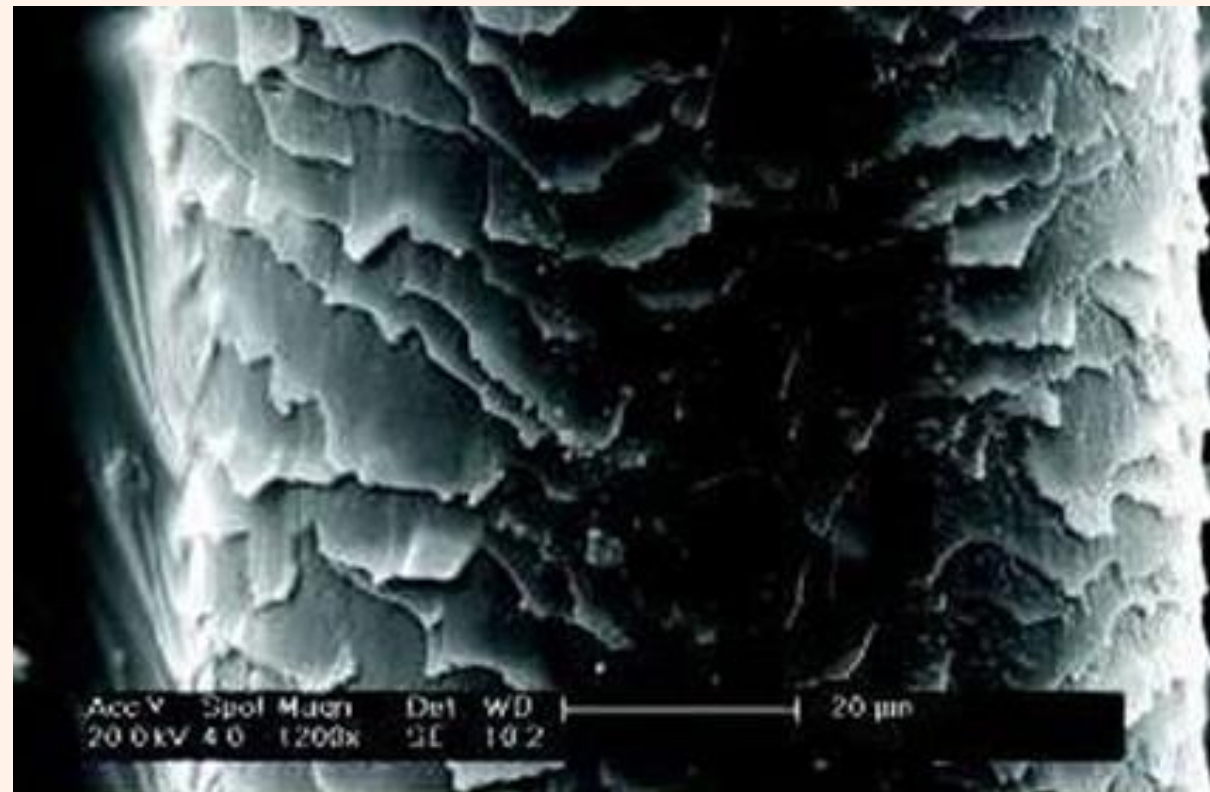
7,0% AlphaImprove 4D Hair - Shampoo

Methodology: Two groups of strands were washed, one with standard shampoo and the other group with shampoo containing AlphaImprove 4D Hair

After rinsing, the two groups of strands were dried naturally under environmental conditions for subsequent SEM analysis.



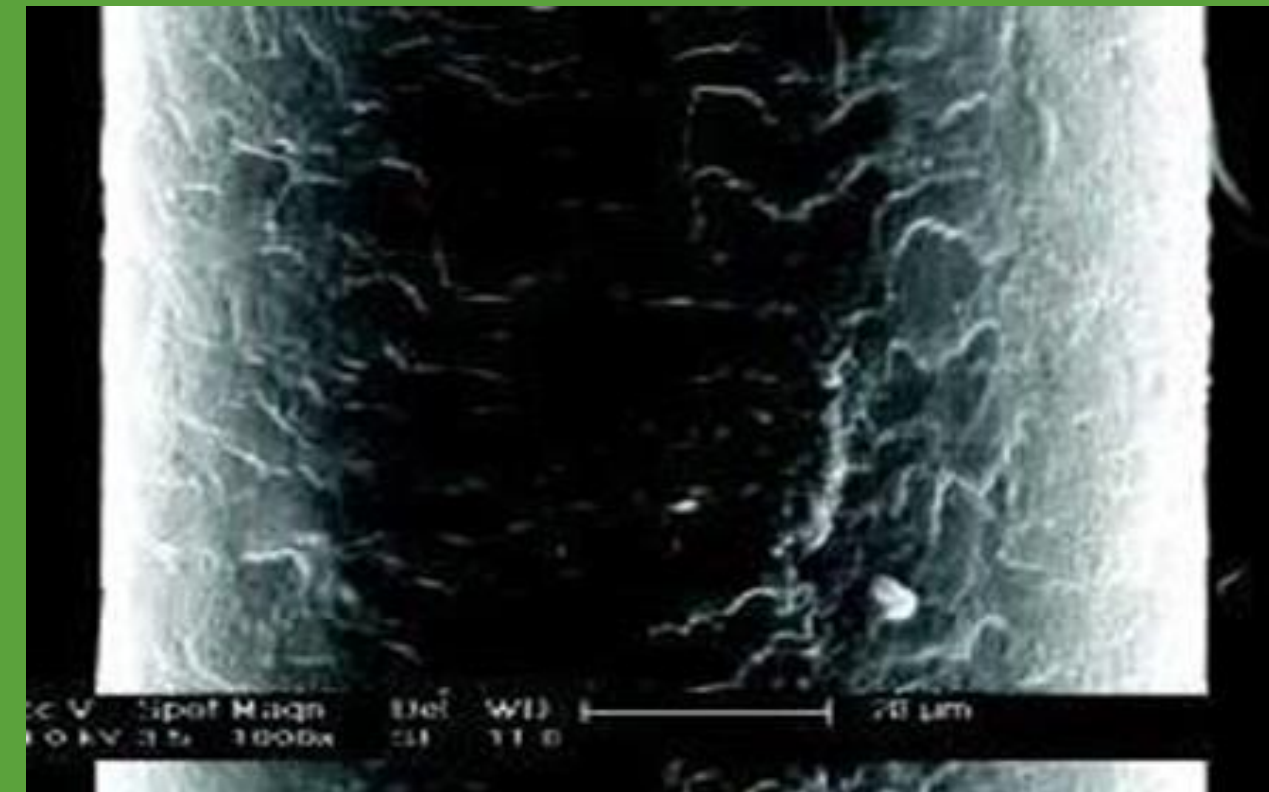
Restoration



Standard Shampoo

Hair Cuticle Restoration

Hair Damage Repair



AlphaImprove 4D Hair

Improves Hair Surface



Hair Fiber Restructuring Scanning Fluorescence Microscopy

7,0% AlphaImprove 4D Hair - Shampoo

Methodology: Two groups of strands were washed, one with standard shampoo and the other group with shampoo containing AlphaImprove 4D Hair

After rinsing, the two groups of strands were dried naturally under environmental conditions for subsequent analysis by Fluorescence.



Restructuring



Standard Shampoo

Restructuring of hair fiber

Redensification of hair fiber



AlphaImprove 4D Hair

Cortical Mass Replacement



Indications

AlphaImprove 4D Hair



Alphalmprove 4D Hair

INCI Name: *Bisabolol, Pentaclethra macroloba seed oil, Orbignya oleifera seed oil*



Recommended Dose: *1,0 – 7,0%*

Recommended pH: *3-10*

Solubility: *Liposoluble*

Dermatologically tested

China Compliant

Vegan

Non-Animal Testing

Chemical-Free

Preservative-Free

Self-preserved

Halal Certified



Shampoo and Conditioner



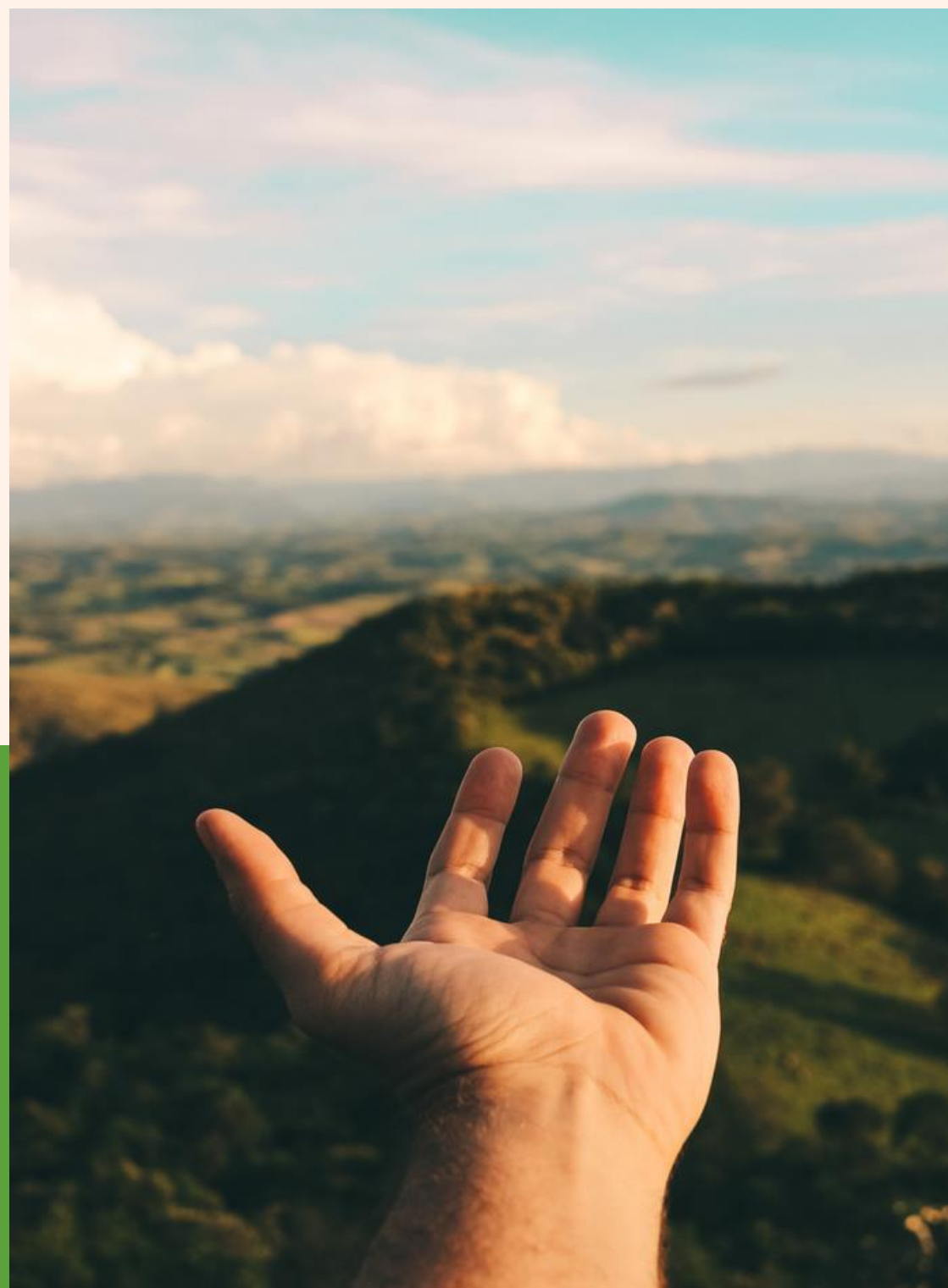
Hair Mask



Hair Oil/Serum



Leave-In



Thank You!

Contact

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