

Salon Half-Head Study



Resurrection Plant
 spring back to life
 functional active
 ingredient with elegant feel
 antioxidant,
 film-former, moisturizing, protectant
 soothing, wound healing

ABSTRACT

The condition of the cuticle (the outer most layer of the hair) significantly affects both, manageability and volume of our hair. Overtime as hair becomes damaged, the cuticle often lifts because of a variety of influences including environment and styling processes. This results in flat, dull hair that is difficult to manage. Improving the shine on the hair has been shown to instantly make it appear healthier and more youthful. Smoothing the cuticle not only eases manageability, but also helps to minimize physical damage that perpetuates the loss of body and difficulty in styling.

Phytofuse Renew® is an innovative, water-soluble active that was created to moisturize and protect the hair when incorporated into hair care products. When added to final formulations, this product is designed to increase the sheen of the hair while providing hydration and antioxidant properties for protection against stressors. The purpose of this study was to confirm if **Phytofuse Renew®**, when incorporated into serum, is capable of providing these benefits to the hair.

A half head study was conducted to determine the comparison of a control serum vs. 2.0% **Phytofuse Renew®** in the control serum. Each volunteer's hair was photographed prior to the treatment and again after the serum had been applied and the hair was styled. The images of the half head study were used in conjunction with a sensory assessment subjectively rating the parameters: cleansing, dry and wet combability, anti-frizz, overall feel, shine and hydration. This assessment was conducted both before and after treatment. Based on the results obtained, **Phytofuse Renew®** is capable of enhancing wet and dry combability, anti-frizz, overall feel, shine and hydration of the hair. These attributes make it an ideal ingredient for products intended for all hair types.

Code Number: 16586

INCI Name: Selaginella Lepidophylla Extract

INCI Status: Approved

CAS Number: 90106-73-3

EINECS Number: 290-298-0

TRF#: HRI 010

Lot Number(s): 65635P

Suggested Use Levels: 1.0 – 10.0%

Use Level for Assay: 2.0%

Sponsor:

Active Concepts, LLC
 107 Technology Drive
 Lincolnton, North Carolina 28092

Study Director: Maureen Danaher

Principle Investigator: Candice Sneed

Suggested Applications:

Moisturizing, Antioxidant, Enhanced Aesthetics, Protectant, Soothing, Wound Healing

Benefits of **Phytofuse Renew®**:

- Enhances Aesthetics of Final Formulas
- Intense Moisturizing Benefits
- Perceivable Sensorial Attributes
- Improved Barrier Function
- Antioxidant Protection

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MATERIALS AND METHODS

The study was conducted using five female participants with a variety of wavy, straight, and curly hair. Each subject had their baseline photo taken prior to having their hair washed. The participants were asked to complete a survey rating their hair prior to treatment on a scale of 1 to 10, with 1 being the lowest and 10 being the highest, using the following parameters: dry and wet combability, anti-frizz, overall feel, shine and hydration.

Half of the head was treated with the control serum while the other half of the head was treated with 2.0% **Phytofuse Renew®** in the base serum. After the application of the test and positive control products, each participant's hair was blown dry using a round brush on both sides of the head. Once the hair was completely dry, the participant was asked to assess the same parameters of both halves of their hair. Assessments were made using a rubric from 1 to 10, with 1 being the lowest and 10 being the highest.

RESULTS

Parameters Tested	Assessment of the Control Serum	Assessment of the Experimental (2.0% Phytofuse Renew® in Control Serum)
Wet Combability	7.2	8
Dry Combability	7.2	8.6
Anti-Frizz	6.8	9.4
Overall Feel	7.4	9.6
Shine	6.8	8.4
Hydration	6.4	9
Mean	7.20	8.00

Table 1. Results for Sensory Assessment of Hair.

Parameters Tested	Percent Difference – Comparison of Control Conditioner vs. Experimental (2.0% Phytofuse Renew® in Control Serum)
Wet Combability	11%
Dry Combability	18%
Anti-Frizz	32%
Overall Feel	26%
Shine	21%
Hydration	34%

Table 2. Percent Difference of Participant's Sensory Assessment.

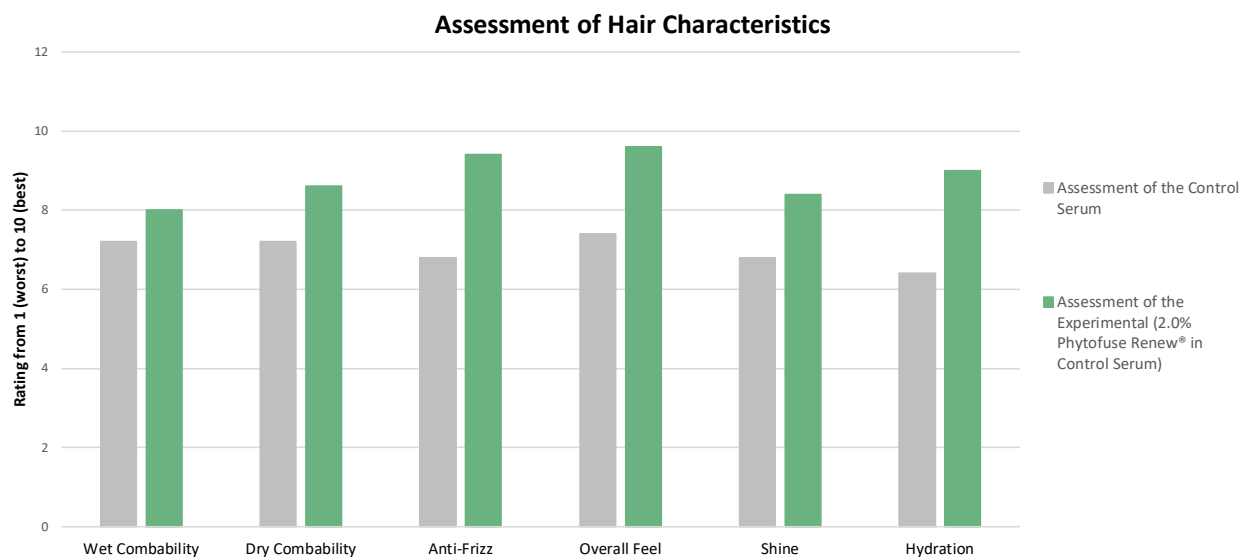


Figure 1. Rating of hair characteristics following sensory assessment.

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Figure 2. Full head Baseline, Untreated Hair.



Figure 3. Half Head Treated.



Figure 4. Full head Baseline, Untreated Hair.

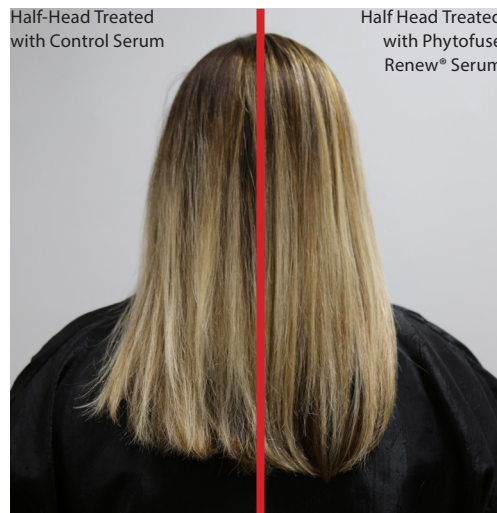


Figure 5. Half Head Treated.



Figure 6. Full head Baseline, Untreated Hair.

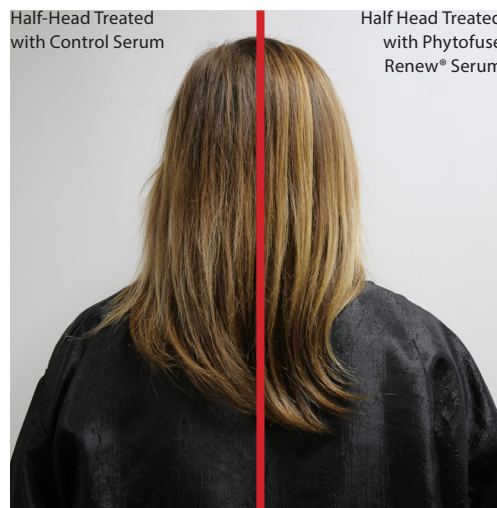


Figure 7. Half Head Treated.

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Figure 8. Full head Baseline, Untreated Hair.

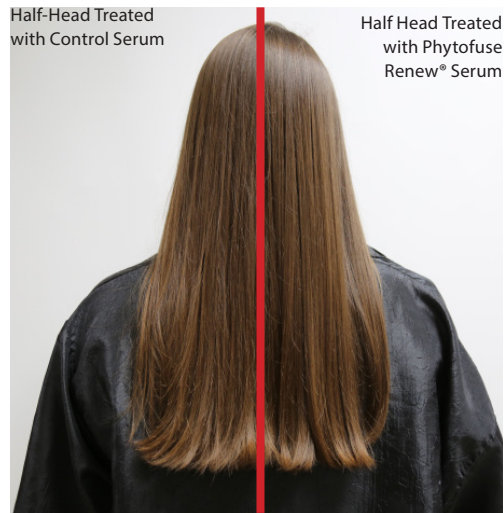


Figure 9. Half Head Treated.



Figure 10. Full head Baseline, Untreated Hair.

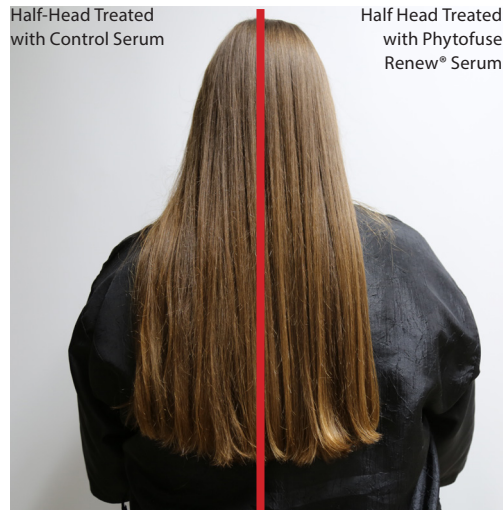


Figure 11. Half Head Treated.

When comparing hair characteristics of the baseline assessments to the post style assessments, the benefits of including 2.0% **Phytofuse Renew®** in a serum are even more apparent. In relation to the baseline readings, the test-half of the head improved the intended subjective parameters, improving wet combability, dry compatability, anti-frizz, overall feel, shine, and hydration for the serum, by 11%, 18%, 32%, 26%, 21% and 34% respectively. It is clear from the images in this study that **Phytofuse Renew®** helps create a smooth, sleek hairstyle. Additionally, in all images, the hair is noticeably shinier with a more conditioned appearance.

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Comparison of Control Conditioner vs.
Experimental (2.0% Phytofuse Renew® in Control Serum)



Figure 12. Hair Assessment results for sensory characteristics

DISCUSSION

The results of the assessment indicate that when used in a conditioner, **Phytofuse Renew®** is capable of improving smoothing, dry and wet combability, anti-frizz, overall feel, shine and hydration more than the control serum. These results can be further supported by Figures 1 through 12, where clearly the half of the subject's head treated with 2.0% **Phytofuse Renew®** appears healthy and silky smooth. Additionally, the subjects reported a significant increase in smoothness and overall feel of the hair.

FNHH01-19-SILK & SHINE TEST SERUM

Ingredient	Trade Name/Vendor	%
Phase I		
Water	Water	22.70
Populus Tremuloides (Aspen) Bark Extract	PhytoCide Aspen Bark Extract	2.00
Water (and) Glycerin (and) Sodium Polyacrylate	Zilgel® VV/Presperse	1.50
Phase II		
Glycerin	Glycerin	1.00
Xanthan Gum	Keltrol® CG/CP Kelco	13.80
Phase III		
Glyceryl Stearate	Protachem GMS-450/Protameen	1.00
Cyclopentasiloxane & Polydimethylsiloxane/Polymethylsilsesquioxane Copolymer & Cashmere & Malva Sylvestris (Mallow) Extract & Liliium Candidum Bulb Extract & Lactobacillus/Eriodictyon Californicum Ferment Extract & Cymbidium Grandiflorum (Orchid) Flower Extract	SilDerm® Softening Cashmere/Active Concepts	5.00
Limnanthes Alba (Meadowfoam) Seed Oil	AC Meadowfoam Oil/Active Concepts	3.00
Stearyl Alcohol	Rita SA/Rita Corp.	1.50
Linum Usitatissimum (Linseed) Seed Oil & Camellia Sinensis Leaf Extract	ABS White Tea Extract OS/Active Concepts	3.00
Bis-Diglyceryl Polyacyladipate-2	Softisan® 649/Sasol	3.00
Ricinus Communis (Castor) Seed Oil (and) Hydrogenated Castor Oil (and) Beeswax (and) Copernicia Cerifera (Carnauba) Wax (and) Methyl Soyate	Lite Natural Wax Jelly/Strahl & Pitsch	3.00
PPG-3 Myristyl Ether	Jeecol PMA-3/Jeen	1.00
Stearic Acid	Stearic Acid/Rita Corp.	2.00
Beeswax	White Beeswax SP-422P/Strahl & Pitsch	0.50
Dimethicone	Dow Corning® 200 Fluid/Dow Corning	4.00
Phase IV		
Lactobacillus/Arundinaria Gigantea Ferment Filtrate	ACB Bamboo Bioferment PF/Active Concepts	5.00
Phase V		
Lactobacillus/Wasabia Japonica Root Ferment Extract & Polyquaternium-10	AC ColorPlex PF/Active Concepts	2.00
& Melanin & Superoxide Dismutase	AC Quaternized Rice Shine PF/Active Concepts	5.00
Hydroxypropyltrimonium Rice Protein	Phytofuse Renew®/Active Concepts	6.00
Selaginella Lepidophylla Extract	Phytofuse Renew®/Active Concepts	6.00
Lactobacillus/Date Fruit Ferment Extract	ACB Date Palm Extract PF/Active Concepts	10.00
Leuconostoc/Radish Root Ferment Filtrate	Leucidal® Liquid/Active Micro Technologies	4.00