EVALUATION OF THE HAIR GROWTH VARIATION

EVALUACIÓN DE LA VARIACIÓN DEL CRECIMIENTO DEL CABELLO

Clinical Study 10270219.A,B

F11 Treatment
by Nuggela & Sulé

Based on nature
nuggela & sulé
THE BEST FOR SKIN AND HAIR CARE

GOOD CLINICAL PRACTICE

Quality Standard by ISO 9001

Report
July 2nd, 2019

PhD Trials Study Code
10270219.A,B

Products
F11 HAIR TREATMENT:
- No.1 PREMIUM SHAMPOO, REF. 010001, BATCH 171A
- REGENERATOR SERUM, REF. 010009, BATCH 1018

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QUALITY INSPECTION CERTIFICATE

CERTIFICADO DE CALIDAD DE LA INSPECCIÓN

Study number *Número del estudio*	10270219.A,B
Date of the beginning of the study *Fecha del comienzo del estudio*	February 11th, 2019 ***11 febrero, 2019***
Date of the end of study *Fecha de fin del estudio*	April 11th, 2019 ***11 abril, 2019***
Date of report *Fecha del informe*	July 2nd, 2019 ***02 julio, 2019***

The study above listed was performed according with the rules of Good Clinical Practices, and under the standardized procedures of PhD Trials.

The Quality System responsible certifies that this report is according with the obtained raw data and respects the procedures and rules above listed.

El estudio se ha realizado según las reglas marcadas por las Buenas Prácticas Clínicas y bajo los procedimientos estandarizados de PhD Trials.

El Quality Sustem responsable certifica que este informe está de acuerdo con los datos obtenidos y respeta tanto los procedimiento como las reglas.

STUDY SUMMARY REPORT

OBJECTIVE	This study intends to assess the hair growth variation, as well as to check the compatibility and acceptability of cosmetic products, after application under the normal conditions of use planned by the Sponsor.
STUDY DATES	Beginning: February 11th, 2019 End: April 11th, 2019
NAMES **REFERENCES** **BATCH NUMBERS**	F11 TREATMENT: No.1 PREMIUM SHAMPOO; REGENERATOR SERUM 010001; 010009 171A; 1018
SUBJECT NUMBER	The test product was assessed in forty (40) subjects.
SPECIFIC INCLUSION CRITERIA	• Age: 18 – 70 years old • Gender: both • All type of skin • Subjects with lack of hair density

CONCLUSIONS

Regarding dermatology:
Under the experimental conditions adopted the repeated applications of the treatment on a panel of 40 subjects induced no reaction and therefore the **F11 TREATMENT** has a **very good skin acceptability and compatibility** under normal conditions of use.

Regarding efficacy:
The **F11 TREATMENT**, after 56 days of application, presented a 73.2% increase in hair length, 2 days after shaving the hair. This change is statistically significant regarding D0.
In brief, the F11 TREATMENT, accelerates hair growth by 41.2%.
The **F11 TREATMENT** presented a 11.6% increase in hair density parameter, after 56 days of products application. This change is statistically significant regarding D0.
The treatment **F11 TREATMENT** presented a 17.9% improvement in clinical hair density score (thickness), after 56 days of products application. These results are statistically signigficant regarding D0.

Regarding self-assessment of practical and cosmetic acceptability and efficacy:
In brief, after 56 days of application the products were, significantly, well appreciated regarding the questions in table I (See section VII.4).

Moreover, 90.0% of the subjects would buy the **F11 TREATMENT** regardless the price and 92.5% of the subjects prefer the investigational product in comparison with the usual one.
In conclusion the results show that the **F11 TREATMENT** has a significant capacity to improve hair density and despite the lack of statistical significance, reveals a tendency to improve the hair regeneration, after 56 days of application.

STUDY 10270219.A,B

I. OBJECTIVE

This study intends to assess the **hair growth variation**, as well as to check the **compatibility and acceptability of cosmetic products**, after application under the normal conditions of use planned by the Sponsor.

The efficacy of the products was assessed:
- objectively and quantitatively, by instrumental measurements of the hair with a Trichoscan® HD system;
- quantitatively by cinical evaluation with a score calculated by a dermatologist or the responsible technician under his authority;
- Illustrative standard photos.

The acceptability was:
- checked every day, by the subjects themselves at home,
- controlled by the dermatologist or the technician, under his authority, and after questioning of the subjects, after products application.

The compatibility was:
- controlled after visual examination of the experimental area, by the dermatologist or the technician, under his authority, and after questioning of the subjects, after products application.

II. STUDY RELEVANCE

II. 1. Methodological approach
The experimental conditions adopted (experimental area, quantity of product applied, frequency and duration of the applications...) reproduce the normal conditions of use advocated and the test performed on a "small scale", reflects the application by the future consumers.
The observance of the experimental conditions by the subjects who take part in the study was assessed by a questionnaire during and at the end of the study.

II.2. Panel
The panel corresponded to the population likely to use the product. The main inclusion criteria: women and men with ages between 18-70 years old, with all types of skin and with lack of hair density.

The number of subjects defined in the protocol was sufficient to check acceptability and compatibility and to assess the efficacy of the products.

II.3. Results

II.3.1.Assessment of the efficacy

The efficacy of the products was assessed by the Technical Department Manager of the investigator center, who has an appropriate experience or by a qualified and experienced technician under his authority.

The method chose for the assessment of the efficacy uses several methodologies. Numerous publications support this methodology (see X).

The instrumental efficacy data are expressed in numbered data and are submitted to a suitable statistical treatment (t-student or Wilcoxon Ranks Signs Test for all the continuous data comparisons between visits).

The subjective data of practical and cosmetic acceptability and efficacy was submitted to a suitable statistical treatment Binomial test.

All the calculations were performed using SPSS 20 (IBM). A 95% level of significance was adopted.

II.3.2. Checking of the acceptability and compatibility

The acceptability and compatibility of the product was controlled by the dermatologist who has an appropriate experience or by the responsible technician under his authority. Numerous publications support this methodology (see section X).

The results were mainly expressed as descriptive data and did not require a statistical treatment.

If the test products are well accepted by the subjects, under these experimental conditions, by extrapolation it should be safe for human health when applied by a great panel of consumers.

II.4. Ethics

The study was performed according to the Declaration of Helsinki principles and subsequent amendments.

The object of the study consists in the application of the test products in accordance with its normal use, in order to reduce any possible risk to subjects that may be selected for the trial. There is a commitment between the particular objectives of the study and any potential risks and problems related to the protocol on trial.

The application of the products was carried out by the responsible Researcher, at the Research Centre. The study was conducted in the spirit of Good Clinical Practice Guidelines and general principles of Law 46/2004 of August 19th. The protocol and test conditions were reviewed by the Internal Review Board (opinion nº 4330/2019 and 4331/2019) and the standard protocol was submitted to the Ethical Commission of PhD Trials (03/07/2018).

The risks incurred by subjects in the development of this study were minor and without any clinical implications. The study may come to reveal previously acquired allergies to some of the ingredients.

However even in such cases, the reaction should be limited to the test area, and its manifestations confined and controlled.

The research centre was responsible for providing information and prior knowledge to all subjects selected.

All the data concerned subject health and clinical data during and after the study performance are subject to medical-patient relationship. The investigational centre cannot send to the sponsor the actual identity of the subjects. The investigational centre presented the data fully codified in respect to subject's data.

III. DATES OF STUDY

Beginning: February 11th, 2019
End: April 11th, 2019

IV. PRODUCTS

IV.1. Identification of the test product F11

Denomination of the product	SHAMPOO	REGENERATOR SERUM
Reference	010001	010009
Batch Number	171A	1018
PhD Trials reference	10270219.A	10270219.B
Usual conditions of use	Pour the shampoo on the palm of your hand when wet and rub lightly until emulsified. Apply on hair and scalp (damp or wet) and massage with the foam generated. Rinse off and repeat the operation ending with a hair massage.	1. Use the serum once a week, divided into 3 applications, for example every Monday, Wednesday and Saturday during 2 months. 2. Apply on the scalp, from the forehead to the nape, in parallel strokes, till covering the entire hair surface. 3. Massage in order to help spread the product and penetrate the active ingredients. 4. Do not rinse off immediately, leave on for at least 6 hours after applying. 5. It is preferable to apply after washing hair, with a clean scalp, to both wet and dry hair. 6. Recommended to use at night.

IV.2. Information concerning the test product

The documents related with the test products, supplied with the samples, were: Letter of Agreement, particularly concerning the conformity of the formulae to the established regulations and their safety, and the Order Form. The qualitative and quantitative formula of the products can be requested by the Investigator in a case by case situation, especially if there are some reactions noted.

V. SUBJECTS

V.1. Number

Forty-four (44) subjects were included in the study.
There were four dropouts and no exclusions.
The aceptability, compatibility and efficacy of the test products were therefore assessed on forty (40) subjects.

V.2. Specific inclusion criteria

The specific inclusion criteria, defined in the protocol, were the following ones:

- Age: 18 – 70 years old
- Gender: both
- All type of skin
- Subjects with lack of hair density

All the subjects corresponded to these specific inclusion criteria.

V.3. Specific non-inclusion criteria

The specific non-inclusion criteria are those defined for this kind of methodology in accordance with the corresponding. See criterial PhD TSC 10270219.A.B.

VI. METHODOLOGY

VI.1. Experimental conditions of application of the test product

The experimental conditions, defined by protocol, were the following ones:

Product	SHAMPOO, REF. 010001, BATCH 171A	REGENERATOR SERUM , REF. 010009, BATCH 1018
Experimental area(s)	Hair and scalp	Scalp
Application(s) at home Frequency/ duration	From D0 to D55 Application at home by the subjects themselves on the scalp and hair, at least three times a week (during bath) during two months (8 weeks)	From D0 to D55 Application at home by the subjects themselves on the scalp, three days a week (once a week divided into 3 separate day applications) during two months (8 weeks)
Quantity	As much as necessary	As much as necessary

Shampoo

Serum

Figure 1 and 2 – Shampoo and serum conditions of use.

VI.2. Standard photos

VI. 2.1 Principle

Standardized photographic images obtained with parallel polarized are obtained during the study with a Canon DSLR camera with a circular polarizer.

VI.2.2 Equipment

A Canon DSLR 5D Mark III camera with a standard Canon EF USM 100mm lens is used to photograph each subject. A HOYA circular polarizer filter is used in front of the camera lens. Two led illumination systems are placed 45º from the camera axis.
The camera definitions are set as follow:

Camera setting: Manual mode "M"
Autofocus and Image stabilizer: On
ISO: 400-800
Whyte balance: 6600k
One-shoot mode
Evaluative focus
Photo to Large mode+Raw
Shutter speed: 1/30th-1/100th depending of the light.

VI.2.3 Measuring area

The measuring area was in the hair and scalp.

VI.2.4 Frequency of measurements

The measurements were performed on D-2 and D56.

VI.3. Self-assessment of cosmetic qualities and efficacy

The subjects answered a questionnaire at the end of the study (D56) which gathers the items concerning the practical and cosmetic acceptability and efficacy of the products, defined with the Sponsor according to the category and target market of the test products.
For each item, the subjects answered according to a defined grading scale (1-Strongly disagree; 2-Disagree; 3-Agree; 4-Fully agree) and the results are expressed in percentage of satisfied subjects.

VII. RESULTS

VII.1. Acceptability results

The results related with skin compatibility and acceptability are the following: No skin reaction was noted after the application of the products. No subject experienced any discomfort during the study. Therefore the products presented a very good skin compatibility and acceptability during the study.

VII.2 Hair assessment

The hair was evaluated by Trichoscan's parameters (hair density, hair length and anagen/telogen hair ratio).

VII.2.1 Hair length variation evaluation

Figure 3 shows the hair length variation evaluation during the study.

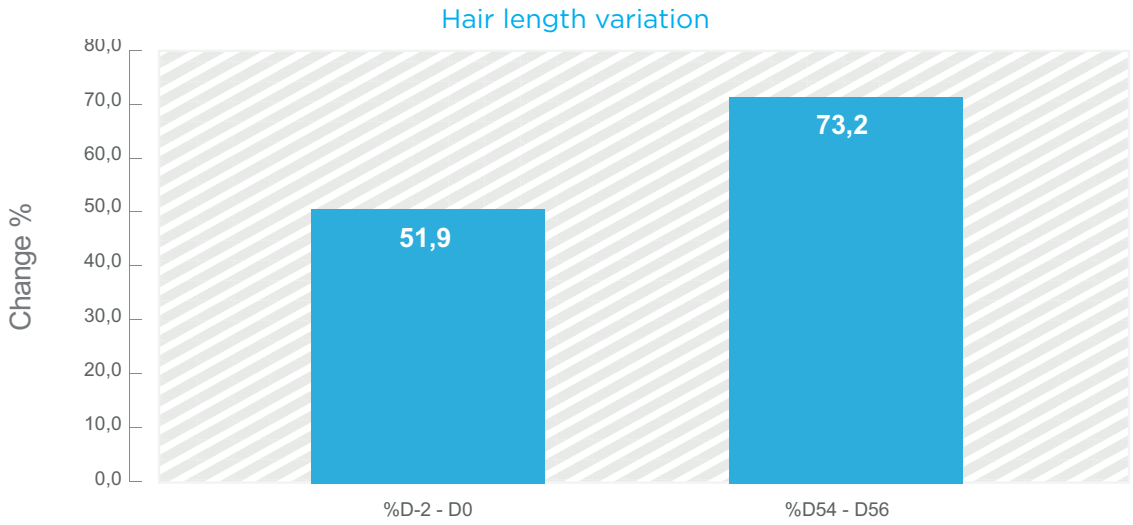

Figure 3 – Hair length evolution during the study. Mean + sd values of the subjects (n=12). Also shown is the statistical comparison against D0 (*: p<0.05; N.S.: Non-significant).

In summary, after 56 days, there was a significant change in hair length variation parameter.

The **F11 TREATMENT** presented a 51.9% increase in hair length at D0, 2 days after shaving the hair. After 56 days of products application, **F11 TREATMENT**, presented a 73.2% increase in hair length, 2 days after shaving the hair. This change is statistically significant regarding D0. **In brief, the F11 TREATMENT, accelerates hair growth by 41.2%**

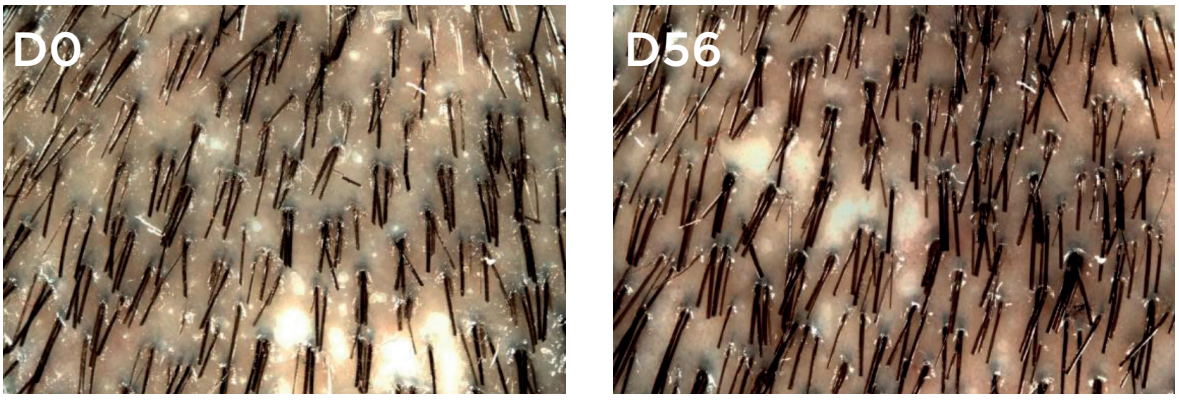

Figure 4 - Trichoscan images during the study for subject #06

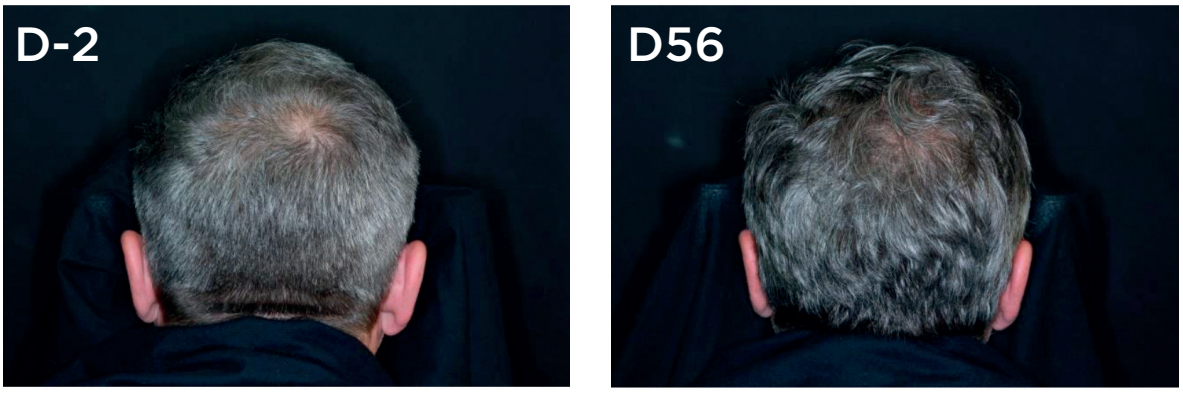

Figure 5 - Standard photos during the study for subject #33

VII.2.2 Hair density evaluation

Figure 6 shows the hair density evaluation during the study.

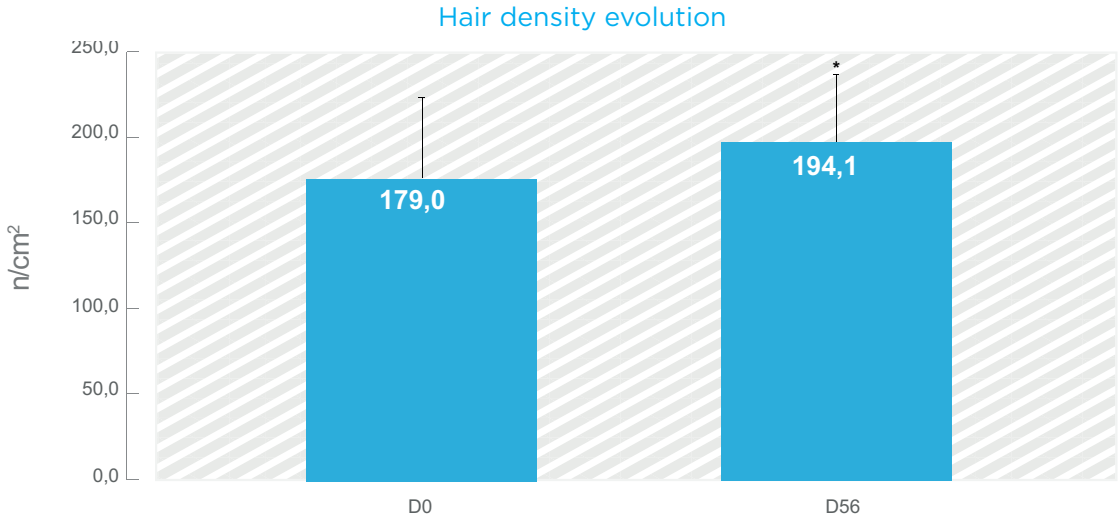

Figure 6 – Hair density evolution during the study. Mean + sd values of all the subjects (n=40). Also shown is the statistical comparison against D0 (*: p<0.05; N.S.: Non-significant).

In summary, after 56 days, there was a statistically significant increase in hair density.
To evaluate the true hair density parameter difference during the study a relative transformation in relation with D0 was performed. The results are summarized in Figure 7.

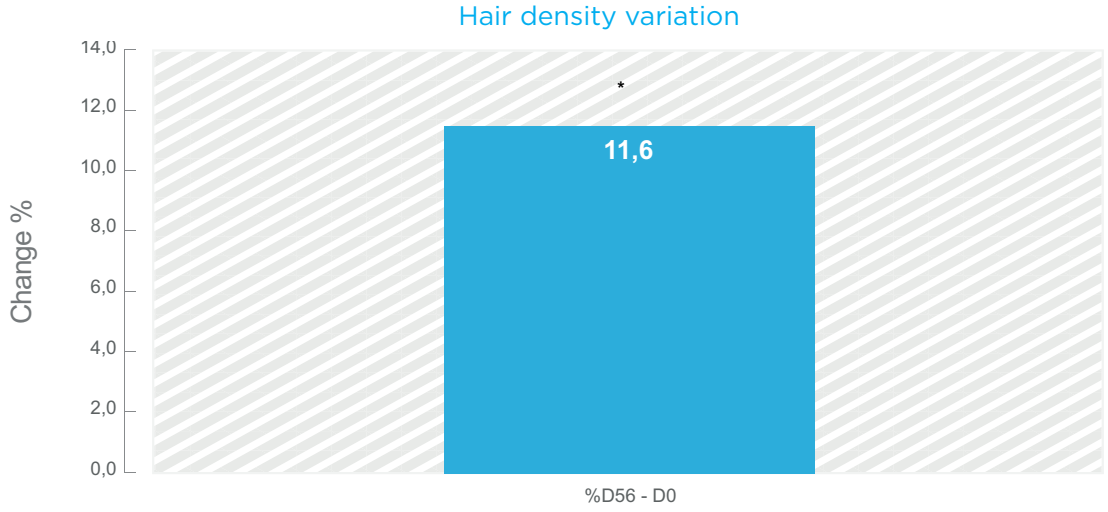

Figure 7 – Hair density % change during the study. Mean values of all the subjects (n=40). Also shown is the statistical comparison against D0 (*: p<0.05; N.S.: Non-significant).

The **F11 TREATMENT** presented a 11.6% increase in hair density parameter, after 56 days of products application. This change is statistically significant regarding D0.

Results at D56 show that, the **F11 TREATMENT** improves hair density.

VII.3 Assessment of efficacy by clinical score

Efficacy was evaluated by clinical score at the first and last (after 56 consecutive days of products application) visits.

VII.3.1 Assessment of the hair density score (thickness)

Figure 8 shows the clinical hair density score evolution during the study.

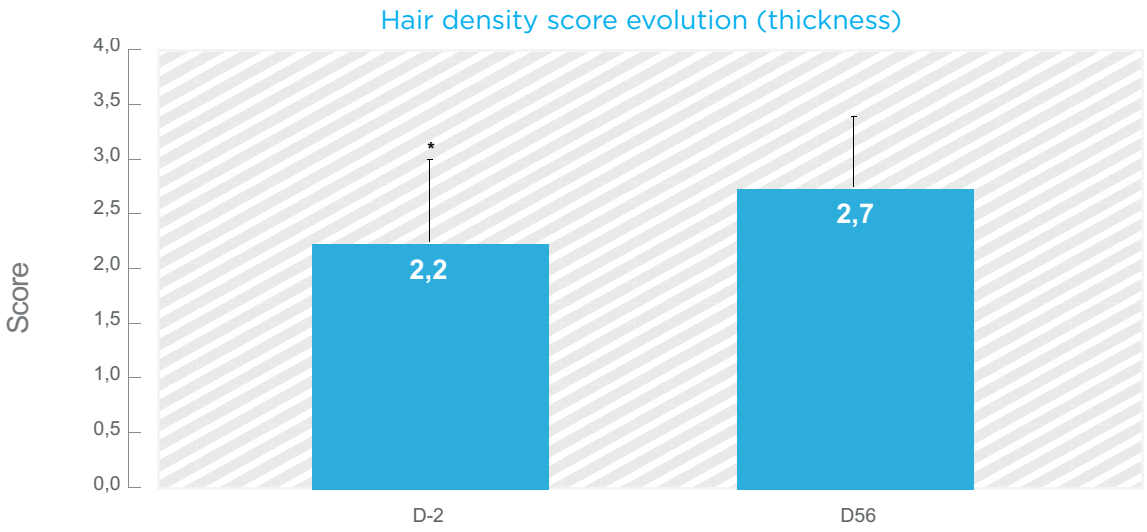

Figure 8 – Clinical hair density score (thickness) evolution during the study. Mean + sd values of all the subjects (n=40). Also shown the statistical comparison against D0 (*: p<0.05; N.S.: Non-significant).

In summary, after 56 days, as a result of products application, there is a statistically significant improvement in clinical hair density score (Thickness).

To evaluate the true cinical hair density score changes after 56 days of treatment, a relative transformation in relation with D0 was performed. The results are summarized in Figure 9.

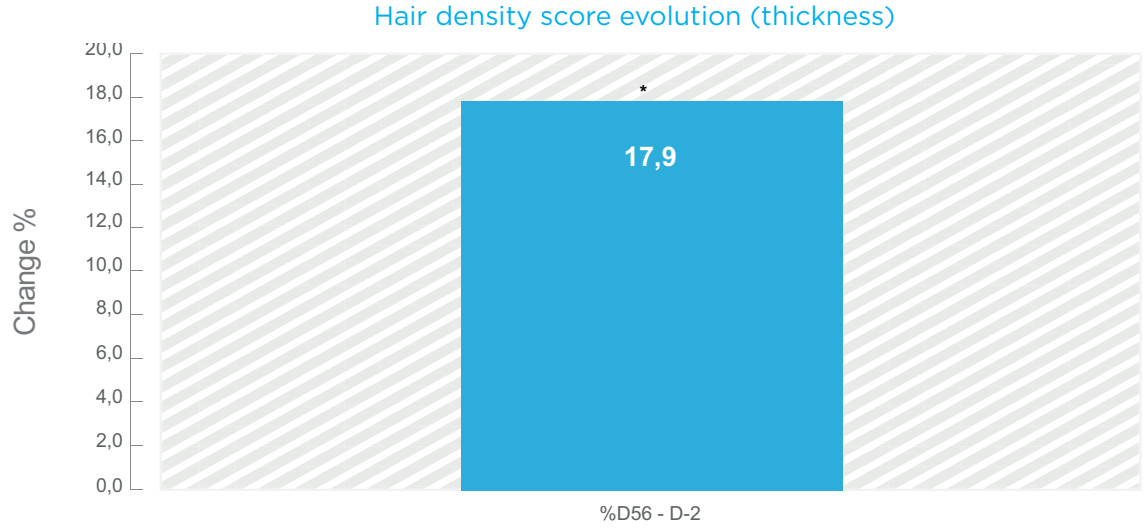

Figure 9 – Clinical hair density score % change during the study. Mean values of all the subjects (n=40). Also shown the statistical comparison against D0 (*: p<0.05; N.S.: Non-significant).

The **F11 TREATMENT** presented a 17.9% improvement in clinical hair density score (thickness), after 56 days of products application. These results are statistically signigficant regarding D0.

This result corroborates the instrumental evaluation of hair density and shows that the **F11 TREATMENT** has a significant capacity to improve the hair density score after 56 days of products application.

VII.4 Self-assessment of practical and cosmetic acceptability and efficacy of the products
Self-assessment of the practical and cosmetic acceptability and efficacy of the products was performed by the subjects at D56.

All the statistical comparisons were performed, with a cutoff value of 3. With this cutoff, any value higher or equal than 3 is considered a positive response.

Table I – Summary of results obtained in the self-assessment for cosmetic efficacy (n=40) at D56.

F11 TREATMENT				
Questions regarding cosmetic efficacy	% Satisfied subjects		Satisfied subjects (grade>=3)	Mean Mark
Q17. Your hair is comfortable?	100.0	✔	40	3.55
Q18. Your hair is soft?	95.0	✔	38	3.40
Q19. Your scalp is moisturized?	97.5	✔	39	3.48
Q20. Your scalp is nourished?	97.5	✔	39	3.38
Q21. The hair volume increased?	85.0	✔	34	3.35
Q22. The hair strength increased?	90.0	✔	36	3.38
Q23. The hair loss during the day decreased?	95.0	✔	38	3.55
Q24. The hair loss while washing decreased?	92.5	✔	37	3.53
Q25. The product leaves a pleasant sensation?	97.5	✔	39	3.40
Q26. The hair is stronger?	87.5	✔	35	3.33
Q27. The hair has grown faster than normal?	87.5	✔	35	3.18
Q28. Your hair has more volume?	77.5	✔	31	3.28
Q29. Would you recommend the treatment to people who have problems of hair loss?	97.5	✔	39	3.68
Q30. Do you feel your hair has improved?	97.5	✔	39	3.50
Q31. After the treatment, do you feel more attractive?	85.0	✔	34	3.20

Figure 10 and table I present the results for all answers obtained from the subjects regarding cosmetic efficacy.

Figure 10 presents the distribution of answers to the questions 17 to 31 at D56

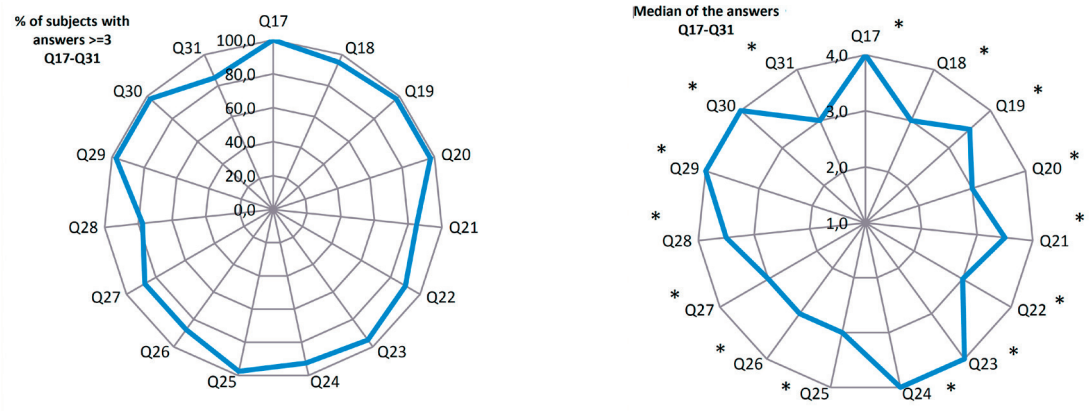

Figure 10 - Median and % of positive answers to questions 17 to 31 (cosmetic efficacy), after 56 days of F11 TREATMENT application. Values of all the subjects (n=40). Also shown is the statistical significance of positive responses (*: p<0.05; N.S.: Non-significant).

Figures 11 and 12 present the answers related with the purchase intention and preference of the investigational product in comparison with the usual one, respectively.

Q 32: Purchase intention independently of the price

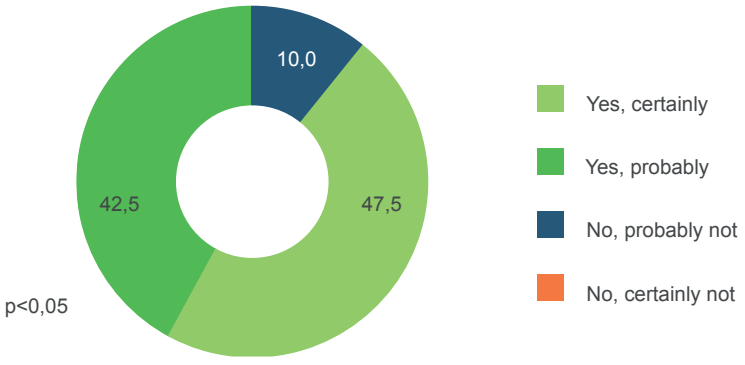

Figure 11 - % of answers to purchase intention. Values of all the subjects (n=40). Also shown the statistical significance of positive responses (Significant: p<0.05; N.S.: Non-significant).

Q33: Preference of the investigational product in comparison with the usual one

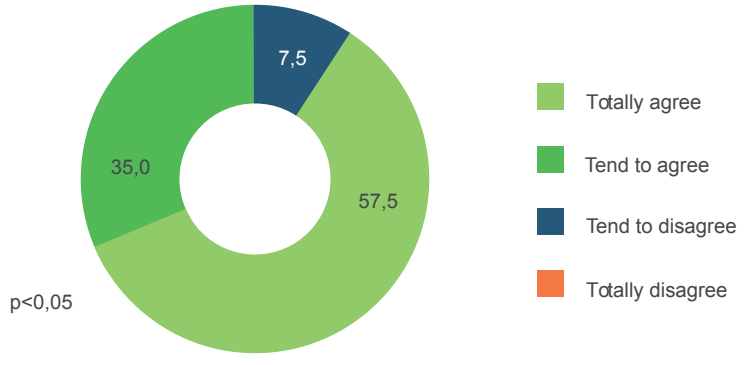

Figure 12 - % of answers to preference of the investigational product in comparison with the usual one. Values of all the subjects (n=40). Also shown the statistical significance of positive responses (Significant: p<0.05; N.S.: Non-significant).

In brief, 90.0% of the subjects would buy the **F11 TREATMENT** regardless the price and 92.5% of the subjects prefer the investigational product in comparison with the usual one.

VIII.

CONCLUSION

Regarding dermatology:

Under the experimental conditions adopted the repeated applications of the treatment on a panel of 40 subjects induced no reaction and therefore the **F11 TREATMENT** has a **very good skin acceptability and compatibility** under normal conditions of use.

Regarding efficacy:

The F11 TREATMENT, after 56 days of application, presented a 73.2% increase in hair length, 2 days after shaving the hair. This change is statistically significant regarding D0. In brief, the F11 TREATMENT, accelerates hair growth by 41.2%.

The F11 TREATMENT presented a 11.6% increase in hair density parameter, after 56 days of products application. This change is statistically significant regarding D0.

The F11 TREATMENT presented a 17.9% improvement in clinical hair density score (thickness), after 56 days of products application. These results are statistically signigficant regarding D0.

Regarding self-assessment of practical and cosmetic acceptability and efficacy:

In brief, after 56 days of application the products were, significantly, well appreciated regarding the following answers:

Q17. 100% of the subjects after the application of the F11 treatment are comfortable with their hair
Q18. 95% feel their hair softer
Q19. 97.5% feel their scalp moisturized
Q20. 97.5% feel their scalp nourished
Q21. 85% that their hair grows with more volume
Q22. 90% feel that the hair strength increased
Q23. 95% feel that the hair loss decreased during the day
Q24. 92.5% feel that the hair loss decreased while washing
Q25. 97.5%. feel that the product leaves a pleasant sensation
Q26. 87.5% feel their hair is stronger
Q27. 87.5% feels that the hair has grown faster than normal
Q28. 77.5% feel that their hair has more volume
Q29. 97.5% would recommend the treatment to people who have problems of hair loss
Q30. 97.5% feel their hair has improved
Q31. 85%. feel more attractive after the treatment

Moreover, 90% of the subjects would buy the F11 TREATMENT regardless the price and 92.5% of the subjects prefer the investigational product in comparison with the usual one.

IX. GOOD CLINICAL PRACTICES

The study was carried out under the basic principles and spirit of Good Clinical Practices ("Avis aux promoteurs et aux investigateurs pour les essais cliniques des médicaments" : principes généraux – FR.OB – 1987, international recommendations ICH E 6, step 4, of 1/5/1996 and general principals of the Portuguese law 46/2004 from August 19th).

X. REFERENCES

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