Final Report

IN VIVO EVALUATION OF THE ANTI-WRINKLE , ELASTICIZING AND FIRMING EFFICACY OF A COSMETIC PRODUCT ON 100 VOLUNTEERS
(LONG TERM TEST)

Study N°	**CF024/14-02-03**
Study protocol code	**REL/0701/2014/CLI/SAB** **REL/0702/2014/CLI/SAB**
Customer	**Chase Life Extension Foundation Ltd,** **64 Stapleford Crescent, Browns Bay** **North SHore, Auckland 0630** **New Zealand**
Product/test substance	**TAM- 818 Serum** **Batch:F7NCT/ 200114**

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Other professional figures involved in the study:

_____

_____

AUTHENTICITY OF RESULTS

I hereby declare that the study concerned by this report was carried out under my responsibility, according to the experimental protocol and the quality plan of the Abich S.r.l.. I also state that, whenever applicable, all procedures were compliant with the principles of Good Clical Practice.
All relevant observations and data recorded during the test are reported in this study report.
I certify the re-reading of this report and a do agree with its content.

The Medical Director
Dott. Samuele Burastero

_____

Date: 15/05/2014

INDEX

SUMMARY *5*
DISCLAIMER *5*
REGULATORY ASPECTS *5*
TEST SUBSTANCE *6*
PANEL RECRUITMENT *6*
ARCHIVING *9*

STUDY N° CF024/14-02 10

1. INTRODUCTION *11*
2. INSTRUMENTATION AND MATERIALS *11*
3. EXPERIMENTAL DESIGN *12*
4. ESSAY METHODOLOGY *12*
5. TOLERABILITY *13*
6. DATA EVALUATION AND STATISTICAL ANALYSIS *13*
7. RESULTS *14*
8. DISCUSSION AND CONCLUSIONS *28*

STUDY N° CF024/14-03 29

1 INTRODUCTION *30*
2 INSTRUMENTATION AND MATERIALS *31*
3 EXPERIMENTAL DESIGN *31*
4 ESSAY METHODOLOGY *32*
5 TOLERABILITY *32*
6 STATISTICAL ANALYSIS *32*
7 RESULTS *33*
8 DISCUSSION AND CONCLUSIONS *36*
BIBLIOGRAPHY *37*
ANNEXES *39*

SUMMARY

By assignment from the Company **Chase Life Extension Foundation Ltd**, on the test substance **TAM-818 Serum** an *in vivo* test has been carried out in order to evaluate its anti-wrinkle efficacy and its capability in improving the skin elasticity and firmness on 100 healthy female volunteers.

For this purpose, the following parameters were investigated:

1) Morphological analysis of the crow's feet and forehead treated areas by the means of an in-vivo-3D-Scanner dermaTOP-blue (Eotech, France) dedicated to no contact local measurement of the skin surface topography: **STUDY N° CF024/14-02 (REL/0701/2014/CLI/SAB);**

2) Skin elasticity and firmness instrumentally evaluated by means of Cutometer® (Courage-Khazaka GmbH, Germany)**: STUDY N° CF024/14-03 (REL/0702/2014/CLI/SAB);**

The measurements with ***DermaTOP-blue*** were carried out on the crow's feet area and on the forehead before (T0, basal values) and after 15 (T15) and 30 (T30) days of bi-daily application of the product.

The measurements with **Cutometer®** were carried out on the volar surface of the right and left forearm before (T0, basal values) and after 15 (T15) and 30 (T30) days of bi-daily application of the product; the right forearm was treated with the product while the left one remained untreated for all the study duration (negative control area).

Moreover at the end of the study all the participants, have filled in a questionnaire relative to a subjective evaluation of the cosmetic pleasantness, of the organoleptic characteristics, of the perception of efficacy and to a general satisfaction of the product and its performances.

The study was performed at the Abich S.r.l. Clinical and Cosmetological Trials Center in Via Bruno Buozzi, 4 – 20090 – Vimodrone (Milan), Italy.

The experimentation started the 27th February, 2014 and ended the 12nd May, 2014.

DISCLAIMER

According to COLIPA guidelines, the test was performed with the assumption that the Sponsor under its responsibility provided to the personnel of Abich S.r.l. Clinical and Cosmetological Trials Center truthful information on any ingredient of the test product endowed with potential toxicological relevance.
On the basis of such information, a general assessment of the toxicological information concerning the product was preliminarily carried out and ethical implications as to its use during the present study have been considered.

REGULATORY ASPECTS

This study has been carried out in compliance with the most recent recommendations of the World Medical Association Declaration of Helsinki- ethical principles for medical research involving human subjects (Helsinki Declaration 64th WMA General Assembly, Fortaleza, Brazil, October 2013) and according to the Colipa Guidelines for the evaluation of the efficacy of cosmetic products.

TEST SUBSTANCE

The test substance consists of an emulsion of a light yellow colour for cosmetic use.
Name: **TAM- 818 Serum**

Batch/ Formule code: **F7NCT/200114**

Sample Code Abich: 0824/14-05-06

INCI composition: see annex

Pao / Expiration date: n.a.

Storage conditions: room temperature

The characterization of the test substance is under responsibility of the Sponsor.

PANEL RECRUITMENT

a) Characteristics of the panel

The study was performed on 100 healthy female volunteers, aged from 36 to 65 , who were identified from the database of volunteers of the Abich Clinical and Cosmetological Trials Center, and who were evaluated as appropriate for participation in the study and not suffering from diseases to the skin areas to treat.
Before the beginning of the study each volunteer has read and signed an informative form (informed consent form, C.I.). Each volunteers has had the opportunity to ask any kind of questions regarding the study to which was given an exhaustive answer. The volunteer was explained the aim of the test, the procedure and the possible risks related.
Only after signature of the informed consent the participation in the study was permitted.
Only volunteers in good general health conditions were included in the study.
The originals of these informed consent forms were archived at the Abich Cosmetic Lab. All subjects signed a consent allowing to treat personal data according to the Italian law (privacy. D.Lgs 196/2003).
Table 1: Volunteers participant to the study.

N° Vol.	Vol. Code	Age
1	adci526	41
2	ancon12	48
3	aniz367	50
4	anla484	39
5	anla7	47
6	anpan13	48
7	anpe409	52
8	anpe440	60
9	ansa120	60
10	arsu460	54

11	bami523	61
12	brti103	57
13	cabo441	54
14	caca55	58
15	cama505	41
16	caro420	37
17	chce155	48
18	clbe483	39
19	criquat14	56
20	crta129	39
21	dabe206	47
22	dalo334	47
23	debo349	58
24	dima287	48
25	dipi365	59
26	doca447	53
27	dogi445	45
28	elca122	40
29	eliv342	55
30	eman525	50
31	esa8	47
32	fead421	58
33	fibl275	62
34	fipa355	40
35	frga90	51
36	frma177	60
37	gaam497	53
38	gabr259	48
39	Gati439	47
40	gica434	39
41	giga455	51
42	gigr222	49
43	gima500	58
44	gipi527	59
45	giufi20	53
46	kadi493	38
47	lalom4	64
48	lata251	49

49	lili254	59
50	liva137	49
51	lode61	46
52	loma2	51
53	lopo479	63
54	lotu144	57
55	lual476	54
56	lubel22	56
57	lude228	45
58	ludi5	47
59	lufiu18	59
60	luge86	55
61	lupr276	45
62	luri265	46
63	lute520	60
64	lutuc9	60
65	maal258	54
66	maap492	45
67	maca268	55
68	maca64	45
69	macat1	61
70	made135	59
71	malu257	48
72	mama444	46
73	mela164	42
74	migi167	43
75	miro432	52
76	mobe354	53
77	more267	50
78	nagr443	51
79	nama501	50
80	paba487	36
81	pamu418	51
82	pavi307	59
83	pivi463	65
84	rast348	54
85	ricl480	57
86	riia62	65

87	roca128	47
88	roia359	58
89	romi370	65
90	rote181	62
91	rova262	51
92	saca272	45
93	saca38	36
94	sagi270	45
95	sapo213	55
96	sigi469	48
97	tecri3	41
98	tiba281	52
99	tira309	48
100	vidi524	55
MEAN		**52**

b) Exclusion criteria

The following criteria of exclusion were applied:
- Pregnancy or nursing condition.
- Medication (local and/or systemic) which might interfere with the test evaluation.
- Subjects with signs of irritation at the application site.
- Subjects with dermatological problems which that might interfere with the study.
- Simultaneous participation to other studies, which that might interfere with the test evaluation.

Moreover, after study start, the following withdrawal criteria were applied:
- Volunteers who did not follow the conditions as described in the informed consent form, C.I;
- Volunteers who suffered any illness or accident or developed any condition which could affect the outcome of the study;
- Volunteers who did not longer wish to participate in the study.

c) Criteria for study withdrawal

After study start, the following withdrawal criteria were applied:
- volunteers who did not longer wish to participate in the study;
- volunteers who during the study suffered any illness or accident or developed any condition which could affect the outcome of the study;
- volunteers who did not follow the conditions as described in the Study Protocol.

ARCHIVING

The clinical study protocol, the corresponding raw data and the final report are kept in the archives of Abich Clinical and Cosmetological Trials Center, in Via Buozzi, 4, 20090-Vimodrone (MI), both in electronic format and in reduced paper format for a period of 10 years from the issue of the final report. The control samples of the test substance and eventual specific reference material will be kept at last for 3 month, or more, if requested by the Sponsor.

STUDY N° CF024/14-02
REL/0701/2014/CLI/SAB

EVALUATION OF THE ANTI-WRINKLE EFFICACY THROUGH PROFILOMETRIC ANALISYS

1. INTRODUCTION

The surface of the skin is intersected by primary and secondary lines, like a topographical map, with plateaus and valleys. The micro-relief is a good indicator of the aging process of the skin. The primary lines are characteristic of each single individual, at every age and part of the body. They are influenced by external factors such as temperature, humidity, nutrition and pharmaceuticals. Modifications at the level of the micro-relief occur because of the loss of elastic fibers in the dermis and are typical of the aging process (Baumann, 2007; Callaghan and Wilhelm, 2008; Uitto, 2008). Image analysis consents to study in a quantitative way the skin roughness with scientifically validated methodologies, largely used in controlled clinical trials (Kim et al., 2009; Koh et al.). On the basis of these preliminary considerations, the following parameters can be accurately monitored and maintained constant in the execution of essays that quantify the roughness (Dobrev, 2002):
a) the area of the analyzed skin, that may differ significantly by its roughness in topographical areas even only slightly different between each other;
b) ambient humidity and temperature (to higher environmental humidity and temperature correspond higher skin hydration and lower skin roughness, respectively).
The ideal measurement conditions are approximately 20°C and 50% relative humidity.

2. INSTRUMENTATION AND MATERIALS

The following instrumentations and materials were used:

- ***derma TOP-blue di Eotech***: in-vivo 3D scanner optimized to provide precise and reproducible measurements of human skin for dermatological and cosmetic applications without the need of using facial replicas. To ensure the reliable and accurate reproducibility of the proband's positioning for several skin scanning session over a period of several minutes, hours or weeks, a professional measuring station was developed and optimized for the specific requirements of this application. Together with the alignment possibilities of a sophisticated 3D software, it is made sure that in each measuring session the same area of examination is being analyzed. Data acquisition, visualization and analysis are performed by dermaTOP software, based on Breuckmann's program OPTOCAT. Intelligent data post-processing functions provide high-quality 3D results and powerful evaluation tools are proposed to compute different parameters that are representative of the efficacy of the product or treatment.The software compares the results obtained evaluating the volunteers at time 0 and after the treatment with the product to be tested. The instrument measures very precisely the performances of cosmetic products formulated to reduce skin imperfections such as wrinkles.

- **Thermohygrometer**: Taylor Precision, model Lp, to monitored temperature and humidity in the room.

3. EXPERIMENTAL DESIGN

3.1 Structure of the study

The study has been executed with an open observational modality.

3.2 Aim of the study

The present study is finalized to evaluate the medium and long term effectiveness of the product in reducing the appearance of wrinkles and fine lines and then in improving the skin aspect.
This evaluation implied the comparison of the following analyzed parameters:

- **Rz- mean depth of roughness**
- **Ra- arithmetical mean of roughness**

These parameters are related to the skin area of interest and they were measured prior to the product application (time 0= T0) and at each defined time of analysis after the product use.
In particular to evaluate the efficacy of the product under study, skin surface topography changes were evaluated by comparing the values relative to the described parameters measured before the product application (T0) with those measured after 15 (T15) and 30 (T30) days of bi-daily product application.

3.3 Environmental conditions

The study was carried out under standard environmental conditions for each reading time, monitoring and maintaining constant temperature and humidity.

3.4 Method of application

The product under examination was applied by each volunteers twice daily on the entire face.

3.5 Evaluated skin areas

The profilometric analysis has been made on the crows's feet area and on the forehead; the analyzed areas at the various experimental times were as much as possible superimposable.

4. ESSAY METHODOLOGY

4.1 Study duration

The study lasted 30 days for each volunteer.

4.2 Preparation of the volunteer

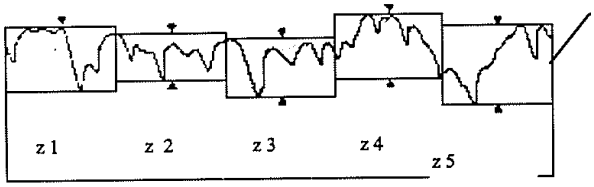
Before each measurement with the DermaTOP-blue, each volunteer was allow to relax in an air conditioned room to avoid anomalous sampling due to excessive sweating or stress.

4.3 Wrinkles and fine lines measurement

The analysis of the skin surface topography by the means of **Visio3D dermaTOP BLUE system (EOTECH,France**) is an innovative technique of image analysis without the need of replicas.
The accuracy and the reproducibility of the measurements is guaranteed thanks to a special system studied for the volunteer positioning which allows the measurement of the same areas at different measurement times for the same subject and thanks to the optoCAT software utilized for the visualization, acquisition and results analysis.
This software is able to extract from the acquired images the same area of interest at the different times of analysis and to overlap it aligning to the previous one.

Two of the most representative parameters for the anti-wrinkle efficacy evaluation, taken into account in this study , is **Rz or average maximum profile height difference and Ra or arithmetical mean of roughness.**

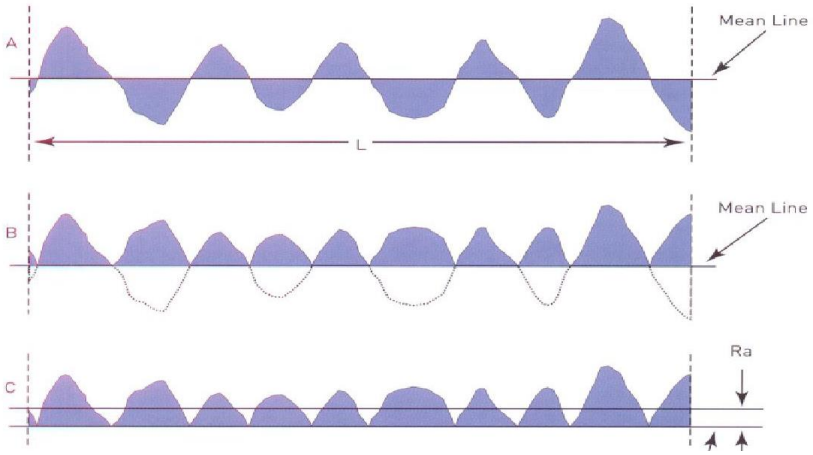
Rz represents the arithmetic average of the different segment roughness calculated from 5 succeeding measurement segments of the same length. In contrast to the other profile roughness parameters Rz is not that much influenced by artifacts due to calculating the average.



$$Rz = \frac{z1 + z2 + z3 + z4 + z5}{5}$$

Ra represents the arithmetical mean of roughness and is the generally used parameter for the evaluation of skin roughness since it is based on the sampling of all the points characterizing the micro profile of the skin.

Ra



5. TOLERABILITY

None of the 100 volunteers enrolled in this study, during the product use, showed signs of intolerance or allergic reactions to the product.

6. DATA EVALUATION AND STATISTICAL ANALYSIS

All the values of the parameters analyzed were gathered for each participant and for each measurement time (see annexes).
The average values of each parameter for each measurement time were calculated for the 100 volunteers (Tables 1 and 3, Graphs from 1 to 4).
The % variations of the two parameters were calculated for each volunteer (see annex) and the average % variations were evaluated at time T15 VS T0 and T30 VS T0 (Tables 2 and 4).

The distribution of the values obtained during the measurements at the various experimental times were compared with intra-group analysis using Student's t test (T15 VS T0 and T30 VS T0).
P values<0.05 were considered significant.
All the raw data for each volunteers are listed in annex 1.

7. RESULTS

Under the adopted experimental conditions, the product under examination **TAM- 818 Serum** has demonstrated efficacy in reducing the skin roughness at the level of the analyzed skin areas since caused a decrease in both parameters Rz and Ra after 30 days of bidaily product application.

In particular, Rz **(average maximum profile height difference)** resulted decreased by an average value equal to 7,67% after 15 days and 14,04% after 30 days of bi-daily product application at the level of the forehead while its resulted decreased by an average value equal to 9,00% after 15 days and 11,07% after 30 days of bi-daily application at the level of crow's feet area.
These variations were all statistically significant (p<0,05).

Ra **(arithmetical mean of roughness)** resulted decreased by an average value equal to 6,67% after 15 days and 12,53% after 30 days of bi-daily product application at the level of the forehead while its resulted decreased by an average value equal to 7,58% after 15 days and 9,63% after 30 days of bi-daily product application at the level of crow's feet area.
These variations were all statistically significant (p<0,05).

Rz

The tables below report the means of Rz on the panel of 100 volunteers at each observational times (T0 , T15 and T30, table 1) at the level of the analyzed areas (forehead and left+right crows's feet area) and the mean % variation values of the same parameter calculated as arithmetical average of the single % variations of each volunteer (table 2).
The mean Rz value variations are moreover represented in form of graphs (Graphs 1-2).

Table 1

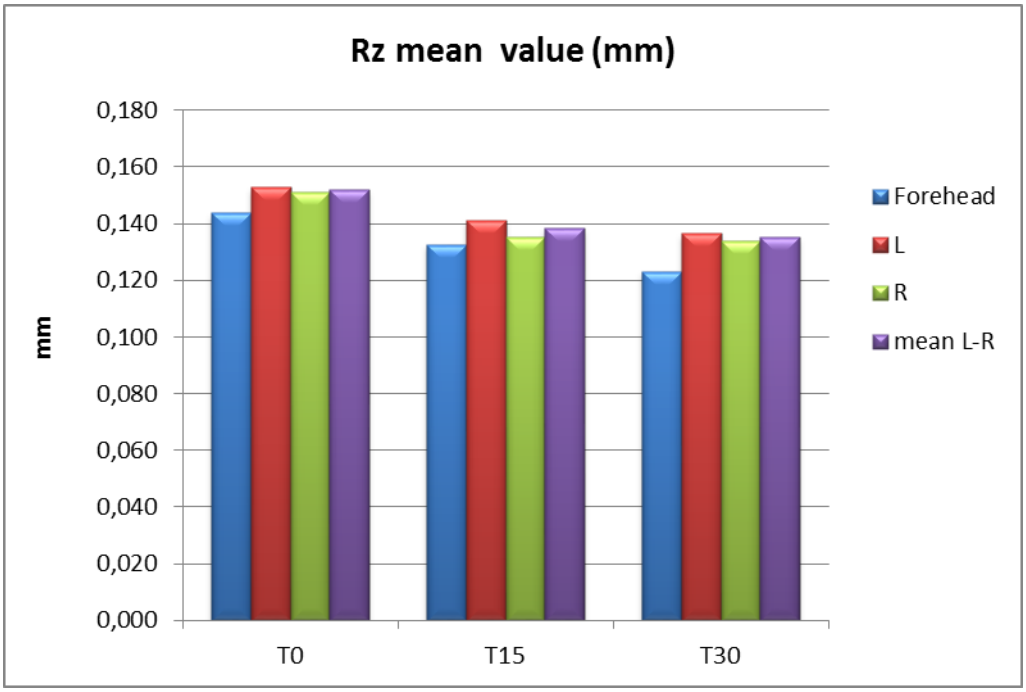
TIME	Forehead	L	R	Mean L-R (left+right crows's feet area)
T0	0,144	0,153	0,151	0,152
T15	0,133	0,141	0,135	0,138
T30	0,123	0,136	0,134	0,135

Table 2

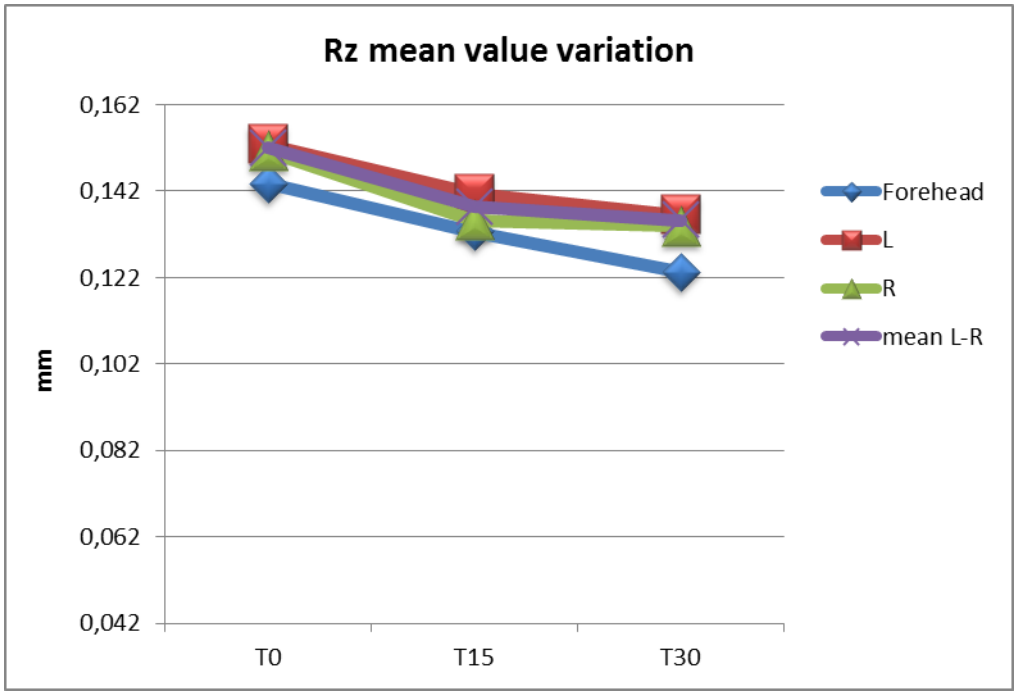
TIME	Mean % variations		p-values	
	Forehead	Mean L-R**	Forehead	Mean L-R
T15 vs T0	-7,67%	-9,00%	<0,0001*	<0,0001*
T30 vs T0	-14,04%	-11,07%	<0,0001*	<0,0001*

* P-values relative to statistically significant result (p<0,05).
**The Mean L-R % variation was calculated on the Rz mean values L-R.

Graph 1



Graph 2



Ra

The tables below report the means of Ra on the panel of 100 volunteers at each observational times (T0, T15 and T30, table 3) at the level of the analyzed areas (forehead and left+right crows's feet area) and the mean % variation values of the same parameter calculated as arithmetical average of the single % variations of each volunteer (table 4).
The mean Ra value variations are moreover represented in form of graphs (Graphs 3-4).

Table 3

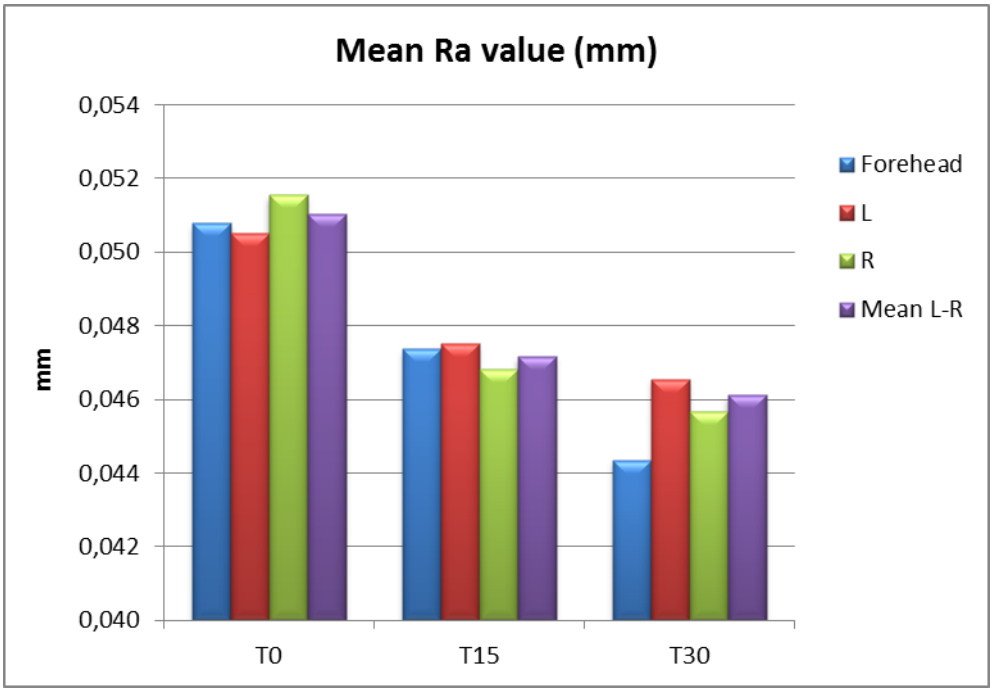
TIME	Forehead	L	R	Mean L-R (left+right crows's feet area)
T0	0,051	0,051	0,052	0,051
T15	0,047	0,048	0,047	0,047
T30	0,044	0,047	0,046	0,046

Table 4

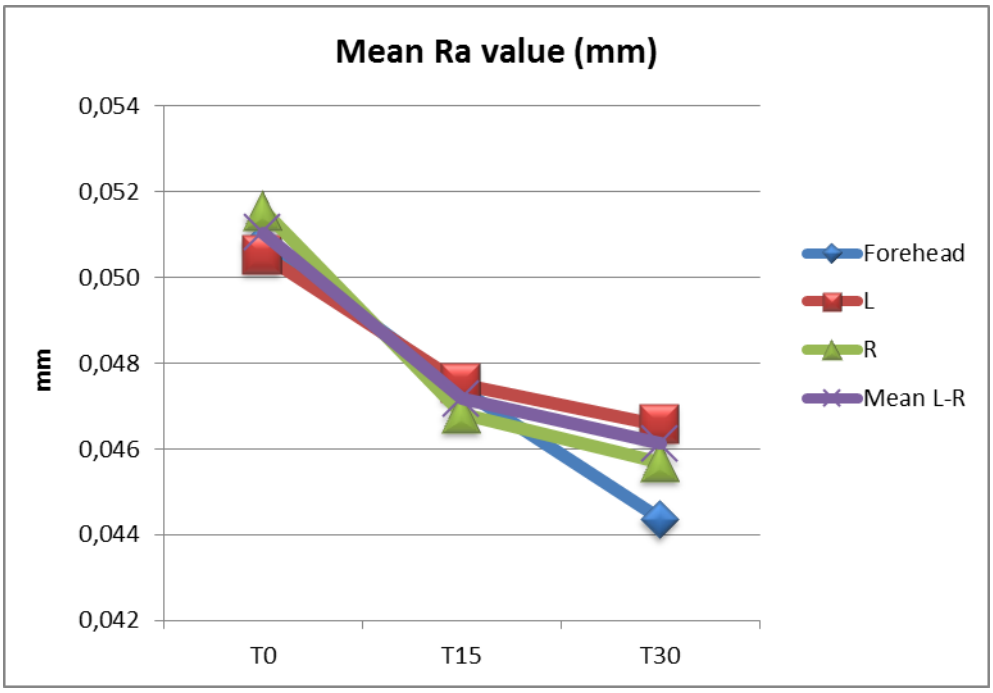
TIME	Mean % variations		p-values	
	Forehead	Mean L-R**	Forehead	Mean L-R
T15 vs T0	-6,67%	-7,58%	<0,0001*	<0,0001*
T30 vs T0	-12,53%	-9,63%	<0,0001*	<0,0001*

* P-values relative to statistically significant result (p<0,05).
**The Mean L-R % variation was calculated on the Ra mean values L-R.

Graph 3



Graph 4


Mean Ra value (mm)
0,054
0,052
0,050
0,048
0,046
0,044
0,042
mm
T0
T15
T30
Forehead
L
R
Mean L-R

REPRESENTATIVE IMAGES OF THE TREATED AREAS

Here below are reported some of the most representative images of the improvement of the skin roughness in the treated areas.

ANPE409

T0

T15

T30

BAMI253

T0

T15

T30

LOTU144

T0

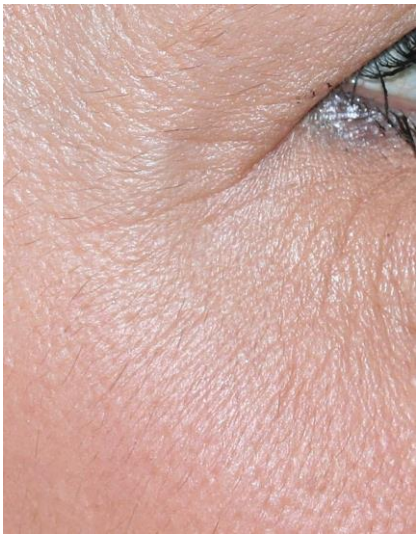
T15

T30

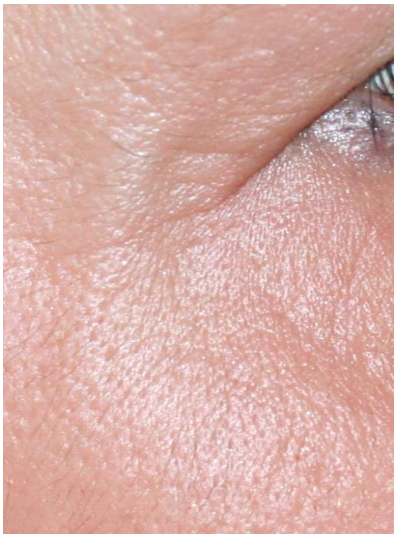
LUFIU18

T0

T15



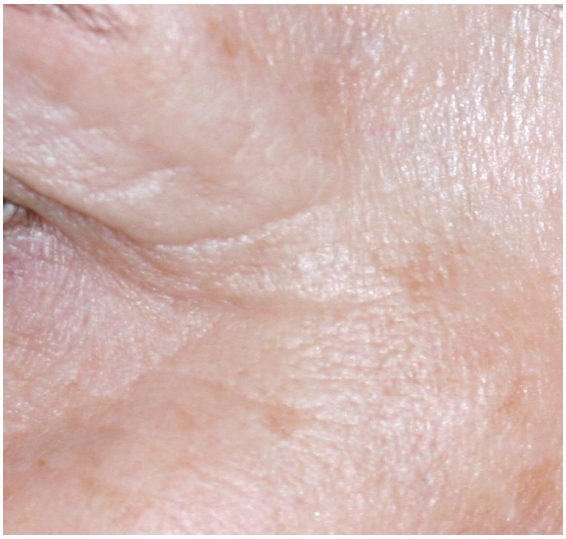
T30



LALOM4

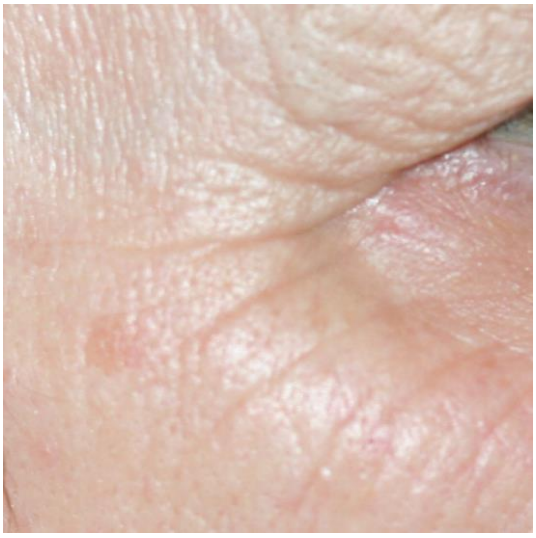
T0

T30

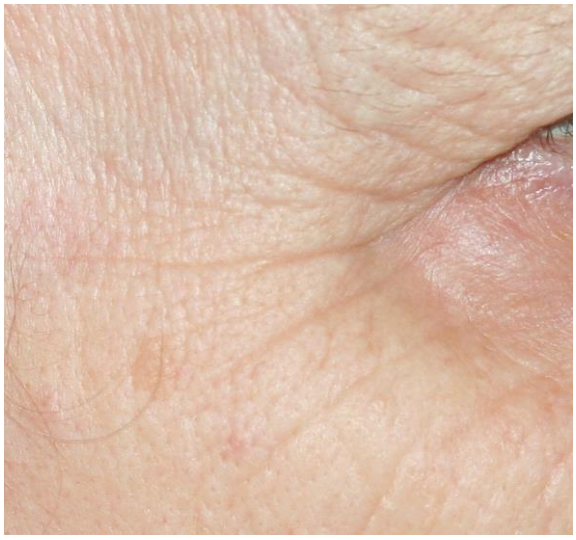


ROMI370

T0

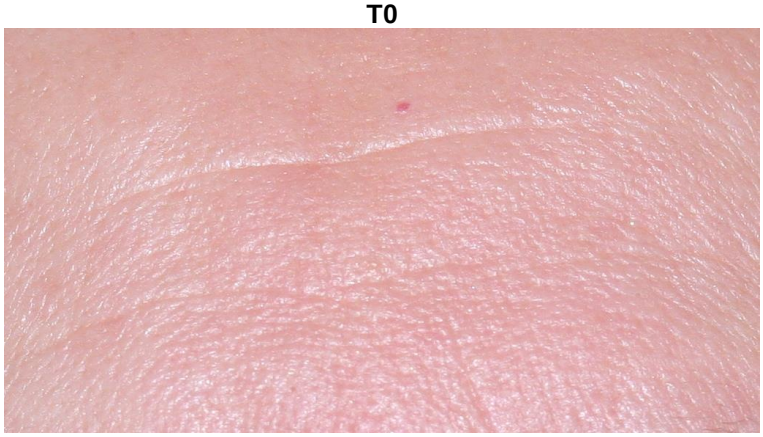


T30

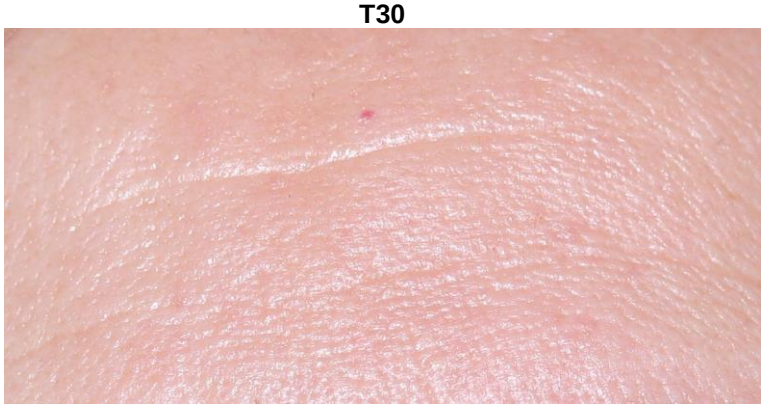


CABO441

T0

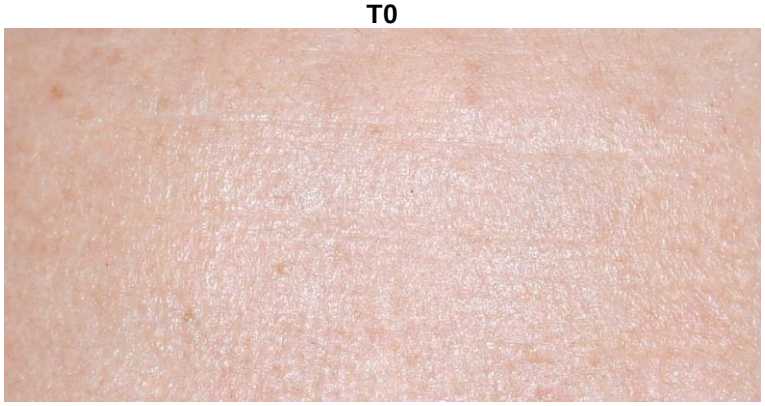


T30



CACA55

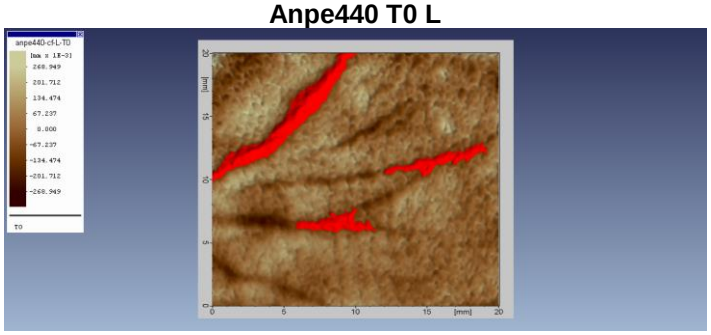
T0



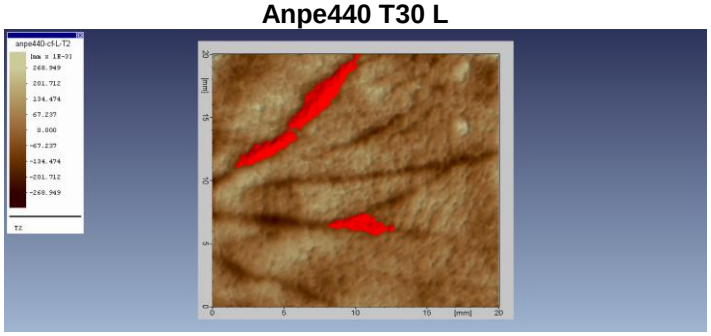
T30

Here below are reported some of the most representative images of the improvement of the skin roughness in the treated areas extrapolated from dermaTOP Blue software before the beginning and at the end of the study after 30 days of bi-daily product usage.

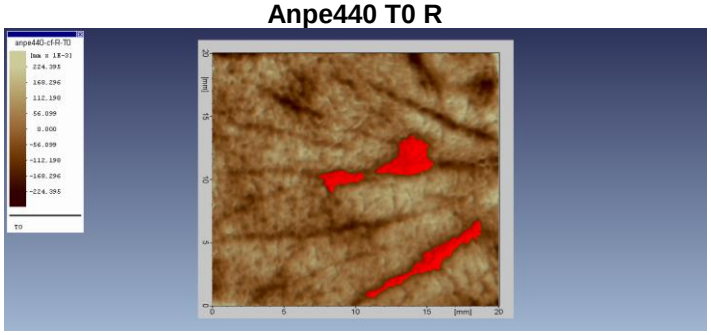
Anpe440 T0 L



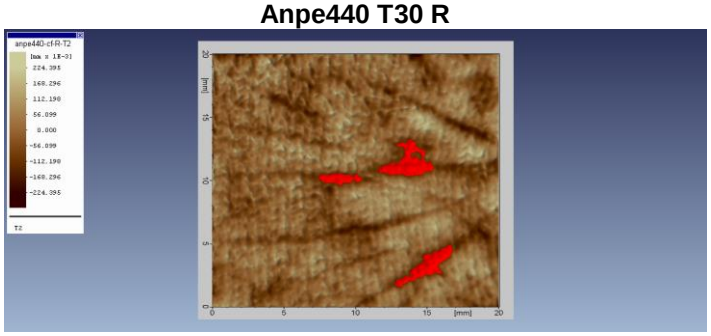
Anpe440 T30 L



Anpe440 T0 R



Anpe440 T30 R



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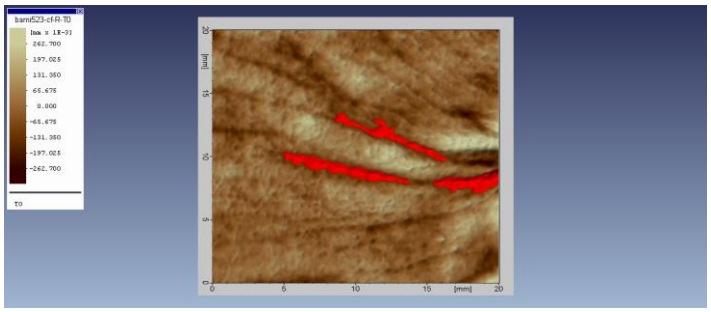

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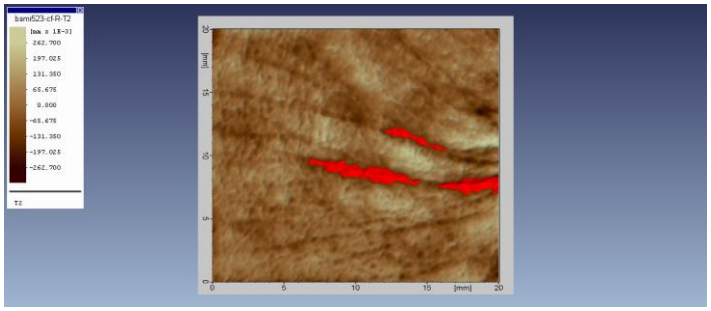

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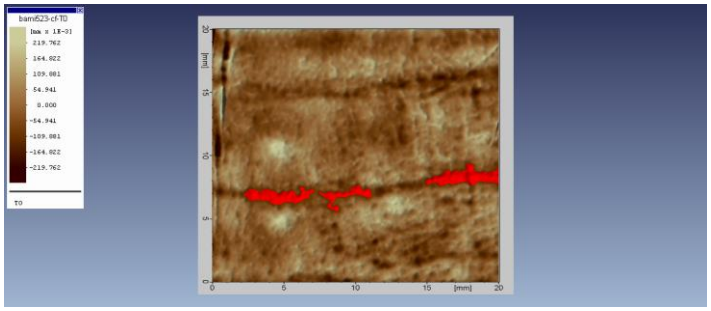

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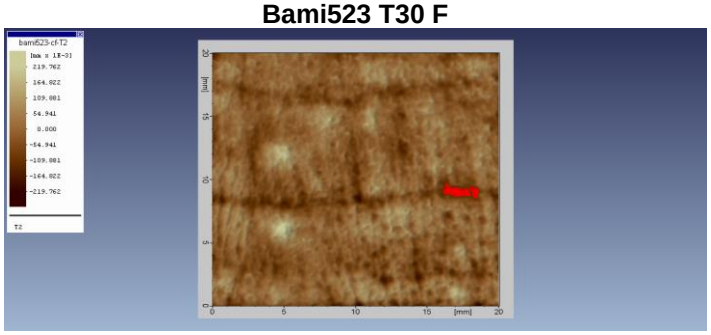
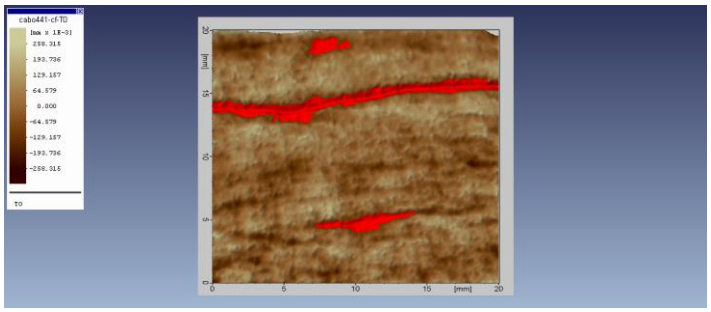


Cabo441 T0 F



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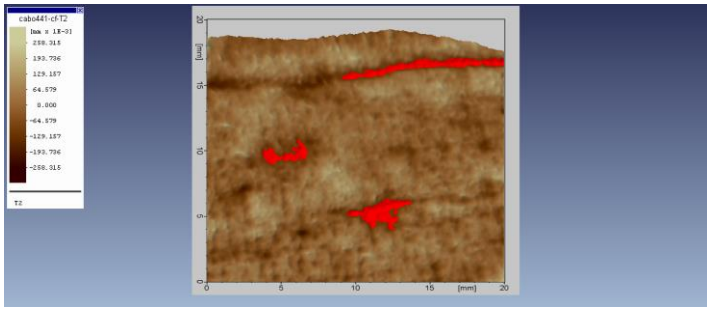
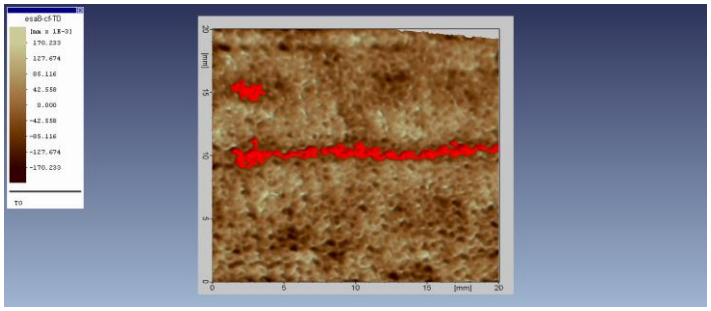


Esa8 T0 F



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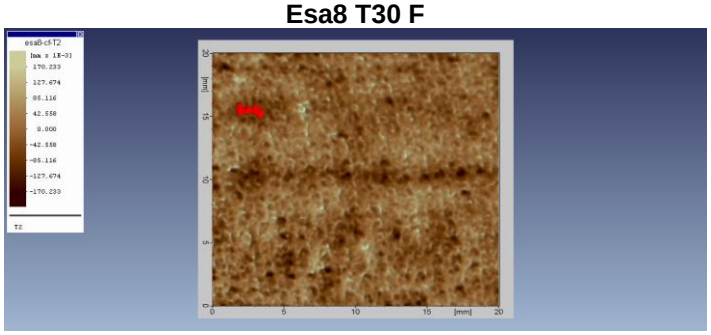
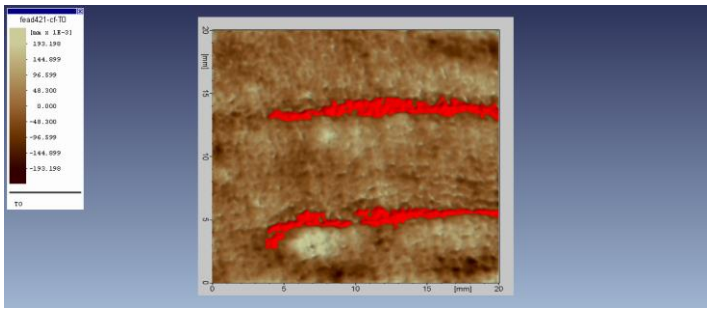


Fead421 T0 F



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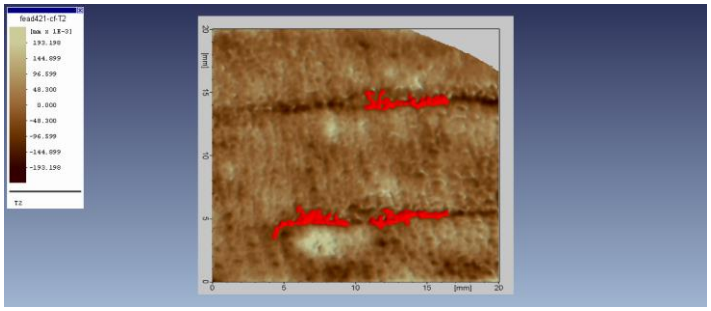
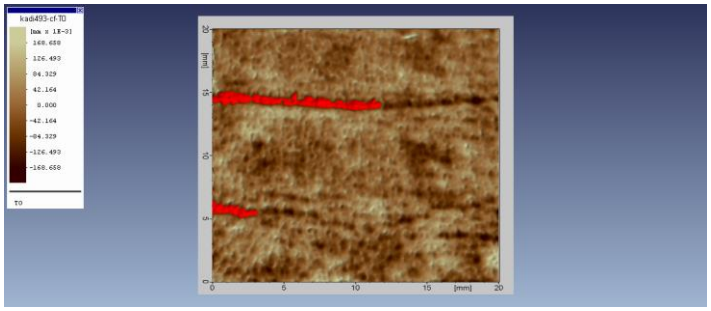


Kadi493 T0 F



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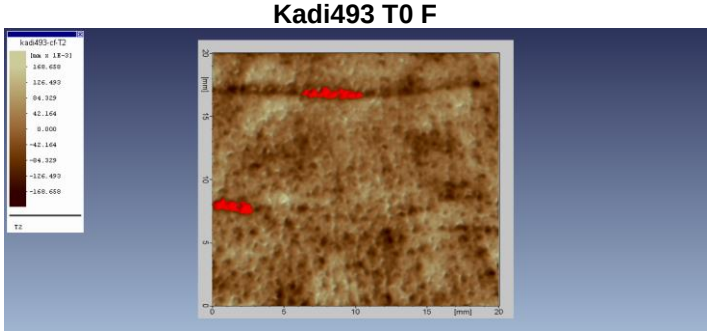
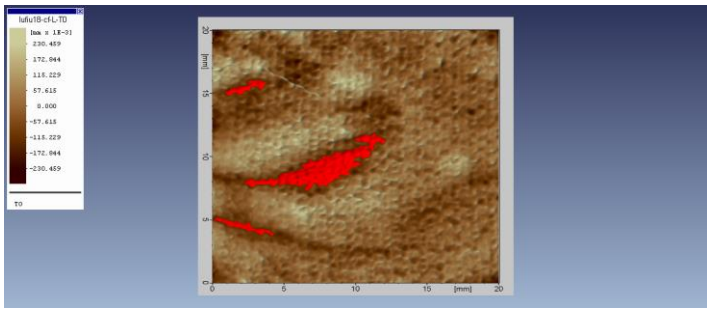
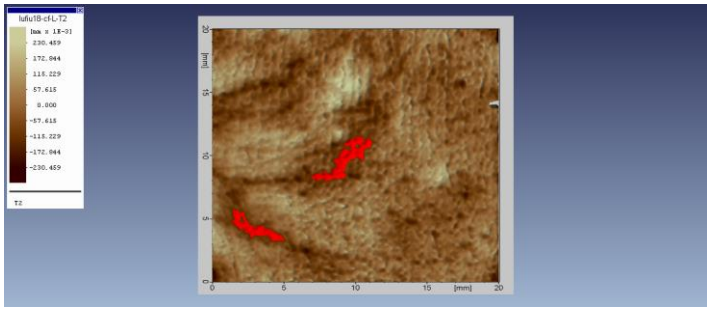


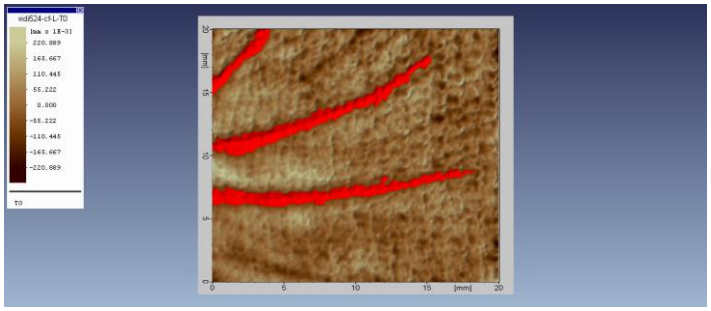
Lufiu18 T0 R



Lufiu18 T30 R



Vidi524 T0 L



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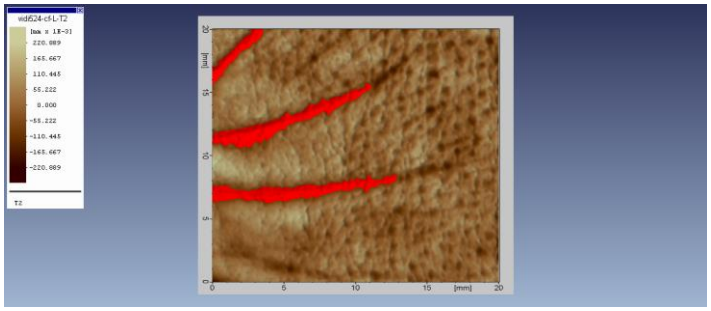


8. DISCUSSION AND CONCLUSIONS

On the basis of the results obtained under the adopted experimental procedure, it can be concluded that the substance under examination

TAM- 818 Serum Batch:F7NCT/ 200114

on the subjects that had undergone the test, determines a statistically significant reduction of the two most accredited parameters in the profilometric evaluation, Rz and Ra (which indicate respectively the mean depth of roughness and the arithmetical mean of roughness) already after 15 and 30 days of bi-daily product application.

In particular, Rz **(average maximum profile height difference)** resulted decreased by an average value equal to 7,67% after 15 days and 14,04% after 30 days of bi-daily product application at the level of the forehead while its resulted decreased by an average value equal to 9,00% after 15 days and 11,07% after 30 days of bi-daily application at the level of crow's feet area.

Ra **(arithmetical mean of roughness)** resulted decreased by an average value equal to 6,67% after 15 days and 12,53% after 30 days of bi-daily product application at the level of the forehead while its resulted decreased by an average value equal to 7,58% after 15 days and 9,63% after 30 days of bi-daily product application at the level of crow's feet area.

These results are correlate to an improvement in skin roughness, and hence, the treatment has been proved to be significantly effective in reducing wrinkle appearance and smoothing the skin's surface.

STUDY N° CF024/14-03
REL/0702/2014/CLI/SAB

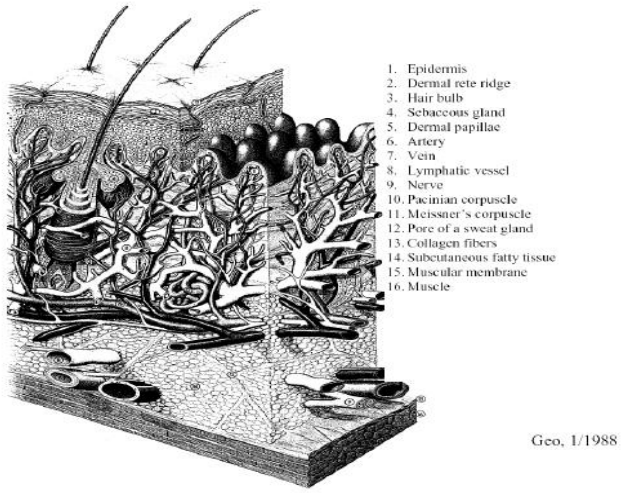
EVALUATION OF THE SKIN ELASTICITY AND

FIRMNESS VARIATION

1 INTRODUCTION

The skin is made up of three components: epidermis, dermis, and hypodermis. The epidermis consists of four layers and is completely regenerated in a 28-day cycle known as skin turnover time.
The outermost layer of the epidermis (stratum corneum) consists of the NMF (Natural Moisturizing Factor) and of a sebaceous film, which cover the epidermis and prevents moisture from evaporating. The dermis is the main component of the skin and consists of collagen and elastin, which maintains the firmness and elasticity of skin, respectively, as well as of hyaluronic acid and water. Hyaluronic acid is a jelly-like substance filling gaps between collagen and elastin.
In the aging process changes in the connective tissue take place that are not easily detected until a secondary manifestation appears. Early changes in visco-elastic properties include sagging and increased extensibility. These changes are measurable in vivo, and represent quantitative parameters that can serve as markers for the efficacy of specific cosmetic products with anti-aging properties. There are four major components in the skin that contribute to determine the viscoelastic parameters, namely the collagen fibers, the elastin fiber, the proteoglycans and water. Each of these components has a unique effect by itself, but their interaction generates very complex responses.
Collagen, the protein that can be found in the greatest quantity in the body, forms the structural network in the skin. Its primary constituents are the amino acids glycine, proline and hydroxyproline. Its mechanical strength (it is indeed on of the one of the strongest proteins in nature) accounts for skin resistance and robustness. Collagen is perceived to begin to deteriorate as we grow older, leading to continuous reduction in the skin's thickness and ultimate sagging.
Elastin and collagen are similar proteins up to some extent. However, elastin is less stretchable than collagen and provides the matrix that binds the individual skin cell. Two unique proteins contained in elastin fibers are desmosine and isodesmosine, which cooperate to enable the skin to stretch and return to its original shape. Skin elastin progressively breaks down as one grows older, leading to the development of wrinkles.
Glucosamino-glycans (GAGs) are special sugar molecules containing glucosamine hydrochloride, N-acetyl glucosamine, and glucosamine sulfate that cooperate to entrap large amounts of water. These component form polysaccharides such as hyaluronic acid, keratin sulfate, heparin, heparin sulfate, dermatin sulfate, and chondroitin sulfate. GAGs are composed of repeated disaccharide units made up of sugars and hexosamines attached to the core of the protein. The GAGs are strongly hydrophilic molecules because they contain large amounts of hydroxyl, carboxyl and sulphate groups, and they physiologically form porous, hydrated gels. Hydrated GAGs cushion the skin by providing mechanical support.

Figure 1 – Skin and subcutis with relative skin annexes.



2 INSTRUMENTATION AND MATERIALS

The following instrumentation and materials were used:

- **Cutometer® MPA580:** digital probe for instrumental measurement of the cutaneous mechanical parameters, produced by Courage-Khazaka GmbH (Germany).

- **Environmental Thermohygrometer** (Courage-Khazaka GmbH - Germany).

- **Dermographycal pencil and tape** measure to delimitate the treated areas and identify the areas where measurements were made.

3 EXPERIMENTAL DESIGN

3.1 Structure of the study

The study has been executed with an open observational modality.

3.2 Aim of the study

The present study is designed to evaluate the effect of the product under study on the skin elasticity and firmness after 15 (T15) and 30 (T30) days of bi-daily application of the product.
For this purpose, the following biomechanical parameters were investigated before the beginning of the study (T0) and at each measurement time (T15 and T30):

- Skin capability to return to its initial position after undergoing tensile stress (suction). This very important parameter is generally called **gross elasticity** (named R2); R2 quantifies skin deformation and give suggestions of the elasticity of the skin.
  The more this value is close to 1 (or 100%), the more conserved is the elasticity of the skin.

- **Resistance to deformation** (max elongation measured) of the skin after suction (named R0); R0 represents the passive force of the skin, and in proportional to the compactness/firmness of skin.
  The lower this value, the higher is the compactness skin.

The evaluation implied the comparison between the elasticity and firmness of the area of interest prior to the product application (time 0= T0) with the same parameters detected in the same area at each measurement time.

3.3 Environmental conditions

The study has been carried out in standard environmental conditions, for each measurement time point, by monitoring and maintaining constant the environmental temperature and humidity.

3.4 Method of application

The product under examination was applied by each volunteer twice a daily on the volar surface of the right forearm between the wrist and the elbow while the left forearm remained untreated.

3.5 Evaluated skin areas

The evaluations of skin elasticity and firmness have been made on a defined point on the volar surface of the forearms between the wrist and the elbow; the analyzed areas at T0, T15 and T30 days were as much as possible superimposable.

4 ESSAY METHODOLOGY

4.1 Study duration

The treatment has been carried out for 30 consecutive days. The product under study was applied twice daily.

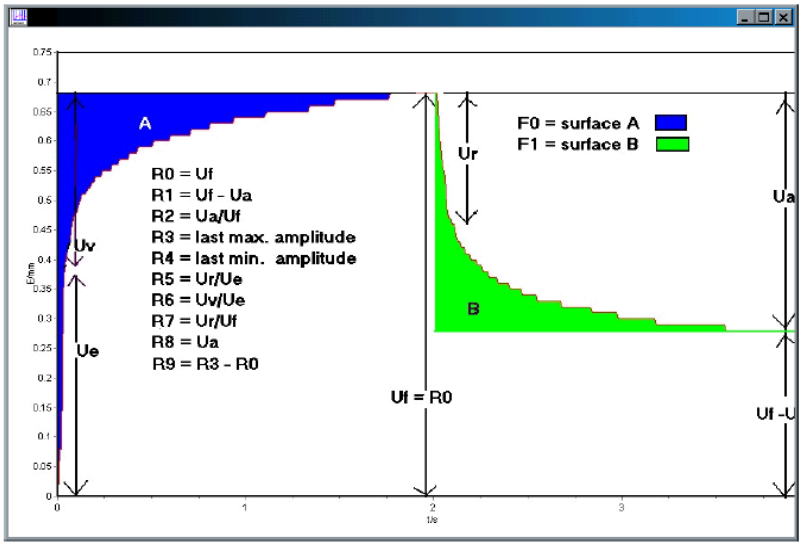
4.2 Preparation of the volunteers

Before each measurement with the Cutometer®, each volunteer was allowed to relax for approximately 10 minutes in an air-conditioned room to avoid anomalous sampling due to excessive sweating or stress.

4.3 Measurement of skin mechanical parameters (elasticity/firmness)

The measuring probe (2 mm in diameter) of the Cutometer® was positioned perpendicular inside the marked area of skin to be tested.
Then, a negative pressure gradient equal to 450 mbar was created (suction), provoking skin penetration inside the probe opening (range: 1 to 10 mm). Suction time was set to 2 seconds. Release time was also set to 2 seconds (standards as suggested by the Manufacturer).
Each measurement was performed throughout three consecutive cycles (suction + release, Fig.2):
R0 represents the max elongation of the skin after suction and it is expressed in mm.
R2 represents the elastic return of the skin to its initial position after suction and it is a relative value because it expresses ratios between lengths expressed in mm

Figure 2



5 TOLERABILITY

None of the 100 volunteers enrolled in this study during the product use showed signs of intolerance or allergic reactions to the product.

6 STATISTICAL ANALYSIS

All the values relative to the analyzed parameters were gathered for each participant and for each measurement time (see annex).

The % variations of the two parameters were calculated for each volunteer (see annex) and the average % variations were evaluated for each measurement time VS T0 (T15 vs T0 and T30 vs T0 Tables 2 and 4).
The distribution of the values obtained during the measurements at the various experimental times were compared with intra-group analysis using Student's t test (T15 vs T0 and T30 vs T0); P values<0.05 were considered significant.
All the raw data for each volunteers are listed in annex.

7 RESULTS

Under the adopted experimental conditions, the product under examination **TAM- 818 Serum** has demonstrated efficacy in improving skin firmness (R0) and skin elasticity (R2) at the level of the analyzed skin area.

In particular, R0 **(firmness)** resulted improved by an average value equal to 12,49% after 15 days of product bi-daily application and by an average value equal to 20,33% after 30 days of product bi-daily application in comparison with the R0 mean value measured at T0 (basal value), before the beginning of the study. These variations were all statistically significant (p<0,05).

R2 **(elasticity)** resulted improved by an average value equal to 4,83% after 15 days of product bi-daily application and by an average value equal to 8,33% after 30 days of product bi-daily application in comparison with the R0 mean value measured at T0 (basal value), before the beginning of the study. These variations were all statistically significant (p<0,05).

Moreover, R0 measured in the untreated skin area has shown the following variations:

- An increment by an average value equal to 0,19% after 15 days of product bi-daily application
- An increment by an average value equal to 0,71% after 30 days of product bi-daily application

in comparison with the same value measured at T0, before the beginning of the study.
R2 measured in the untreated skin has shown the following variations:

- A decrease by an average value equal to 0,35% after 15 days of product bi-daily application
- A decrease by an average value equal to 0,27% after 30 days of product bi-daily application

in comparison with the same value measured at T0, before the beginning of the study.
These values indicate that in the untreated skin area there haven't been variations in skin firmness and elasticity during the study.

R0 (firmness)

The tables below report the means of R0 on the panel of 100 volunteers at each observational times (T0, T15 and T30, table1) and the mean % variation values of the same parameter calculated as arithmetical average of the single % variations of each volunteer (table 2).
A decrease of this parameter indicates an increase of skin firmness.
The mean R0 value variations are moreover represented in form of graphs (Graphs 1-2).

Table 1

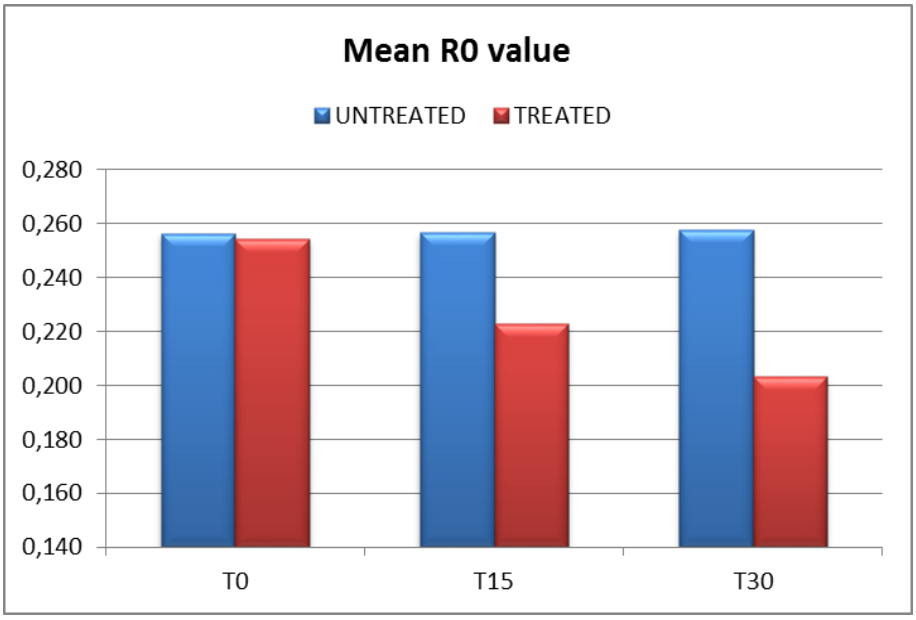
TIME	MEAN R0 (firmness)	
	UNTREATED	TREATED
T0	0,256	0,254
T15	0,256	0,223
T30	0,258	0,203

Table 2

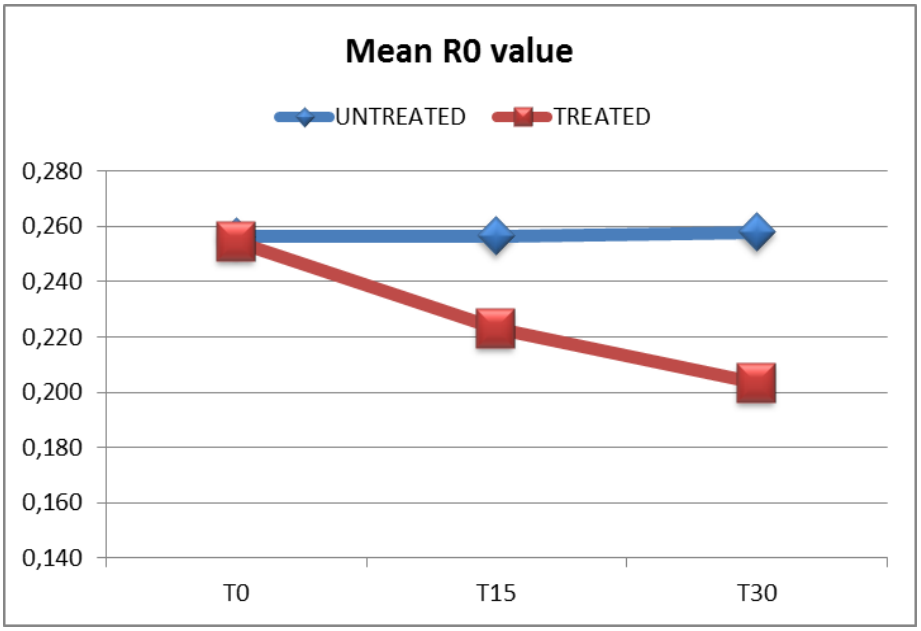
TIME	R0 mean % variations		p-value	
	UNTREATED	TREATED	UNTREATED	TREATED
T15 VS T0	0,19%	-12,49%	0,7446	<0,0001*
T30 VS T0	0,71%	-20,33%	0,0767	<0,0001*

* P-values relative to statistically significant result (p<0,05).

Graph 1



Graph 2



R2 (elasticity)

The tables below report the means of R2 on the panel of 100 volunteers at each observational times (T0, T15 and T30, table 3) and the mean % variation values of the same parameter calculated as arithmetical average of the single % variations of each volunteer (table 4).
An increase of this parameter indicates an increase of skin elasticity.
The mean R2 value variations are moreover represented in form of graphs (Graphs 3-4).

Table 3

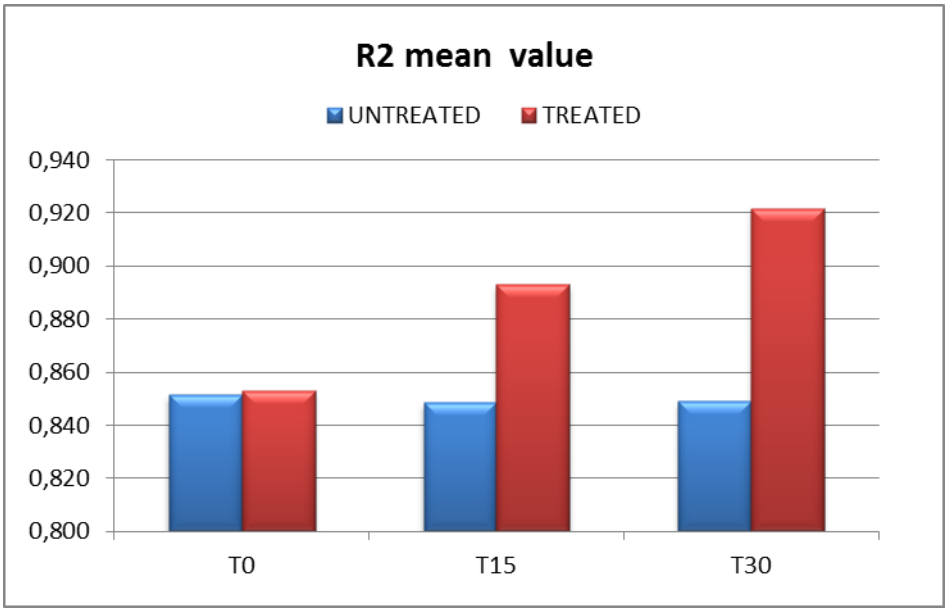
TIME	MEAN R2 (elasticity)	
	UNTREATED	TREATED
T0	0,852	0,853
T15	0,848	0,893
T30	0,849	0,922

Table 4

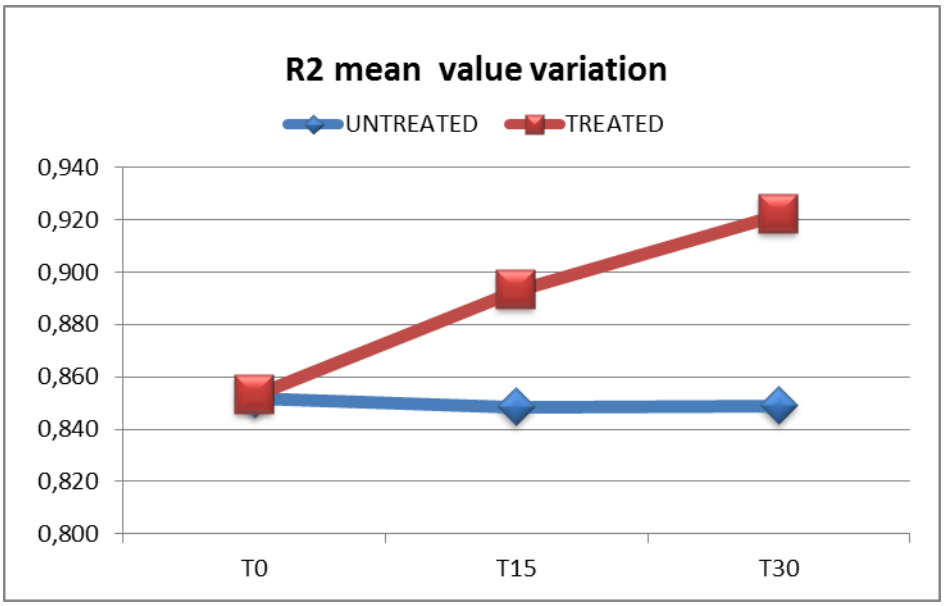
TIME	R2 mean % variations		p-value	
	UNTREATED	TREATED	UNTREATED	TREATED
T15 VS T0	-0,35%	4,83%	0,1300	<0,0001*
T30 VS T0	-0,27%	8,33%	0,1843	<0,0001*

* P-values relative to statistically significant result (p<0,05).

Graph 3



Graph 4



8 DISCUSSION AND CONCLUSIONS

On the basis of the results obtained under the adopted experimental procedure it is possible to conclude that the product under examination

TAM- 818 Serum Batch:F7NCT/ 200114

in the subjects that undergone the test, determined an improvement in skin firmness (R0) and in skin elasticity (R2) of the treated area after 15 and 30 days of bi-daily product application;

In particular:

- after 15 days of product bi-daily application **skin firmness** resulted improved by a mean value equal to 12,49% while **skin elasticity** resulted improved by a mean value equal to 4,83%;
- after 30 days of product bi-daily application **skin firmness** resulted improved by a mean value equal to 20,33% while **skin elasticity** resulted improved by a mean value equal to 8,33%.

BIBLIOGRAPHY

Autori vari, “Manuale del cosmetologo” Tecniche Nuove, Milano 2007, pp.451-453.

EEMCO guidance to the in vivo assessment of tensile functional properties of the skin. Part 2: instrumentation and test modes. Rodrigues L.

“Practical Aspects of Cosmetic Testing- How to Set up a Scientific Study in Skin Physiology” Fluhr, Joachim W.Fluhr (Ed.2011)

Baumann, L. (2007). Skin ageing and its treatment. J Pathol 211, 241-251

Callaghan, T.M., and Wilhelm, K.P. (2008). A review of ageing and an examination of clinical methods in the assessment of ageing skin. Part I: Cellular and molecular perspectives of skin ageing. Int J Cosmet Sci 30, 313-322

De Paepe, K., Lagarde, J.M., Gall, Y., Roseeuw, D., and Rogiers, V. (2000). Microrelief of the skin using a light transmission method. Arch Dermatol Res 292, 500-510

J.M. Lagarde, C. Rouvrais, D. Black, S. Diridollou and Y. Gall. *Centre Jean-Louis Alibert, Institut de Recherche Pierre Fabbre, Toulouse, France.* Skin topography measurement by interference fringe projection: a technical validation.

Linee guida EEMCO. Valutazione della topografia cutanea. JL Lèvêque. Centro Charles Zviak- Clichy Cedex- France

Fischer, T.W., Wigger-Alberti, W., and Elsner, P. (1999). Direct and non-direct measurement techniques for analysis of skin surface topography. Skin Pharmacol Appl Skin Physiol 12, 1-11

Kim, H., Kim, N., Jung, S., Mun, J., Kim, J., Kim, B., Lee, J., Ryoo, H., and Jung, H. (2009). Improvement in skin wrinkles from the use of photostable retinyl retinoate: a randomized controlled trial. Br J Dermatol

COLIPA guidelines for the evaluation of the efficacy of cosmetic products, May 2008.

Brandner, J.M., Kief, S., Wladykowski, E., Houdek, P., and Moll, I. (2006). Tight junction proteins in the skin. Skin Pharmacol Physiol 19, 71-77

Declaration WORLD MEDICAL ASSOCIATION DECLARATION OF HELSINKI
Ethical Principles for Medical Research Involving Human Subjects
Adopted by the 18th WMA General Assembly, Helsinki, Finland, June 1964, and amended by the:
29th WMA General Assembly, Tokyo, Japan, October 1975
35th WMA General Assembly, Venice, Italy, October 1983
41st WMA General Assembly, Hong Kong, September 1989
48th WMA General Assembly, Somerset West, Republic of South Africa, October 1996
52nd WMA General Assembly, Edinburgh, Scotland, October 2000
53rd WMA General Assembly, Washington 2002 (Note of Clarification on paragraph 29 added)
55th WMA General Assembly, Tokyo 2004 (Note of Clarification on Paragraph 30 added)
59th WMA General Assembly, Seoul, October 2008
64th WMA General Assembly, Fortaleza, Brazil, October 2013

Consensus documents Number 4.
OECD SERIES ON PRINCIPALES OF GLP AND COMPLIANCE MONITORING
“Quality assurance and GLP” 26 Oct. 1999.

Consensus documents Number 5.
OECD SERIES ON PRINCIPALES OF GLP AND COMPLIANCE MONITORING
“Compliance of laboratory suppliers with GLP principles” 28 Sept. 2000.

Consensus documents Number 7.
OECD SERIES ON PRINCIPALES OF GLP AND COMPLIANCE MONITORING
“The application of to GLP principles to short term studies” 15 Sept. 1999.

Consensus documents Number 8.
OECD SERIES ON PRINCIPALES OF GLP AND COMPLIANCE MONITORING
“The role and responsibility of the Study Director in the GLP studies” 15 Sept. 1999.

ANNEXES

ANNEX 1

Raw data of Ra parameter (in mm)

Ra (mm)		T0			T15			T30		
N°	Vol. Code	Forehead	L	R	Forehead	L	R	Forehead	L	R
1	adci526	0,052	0,034	0,036	0,051	0,031	0,033	0,048	0,034	0,035
2	ancon12	0,040	0,056	0,057	0,037	0,055	0,051	0,037	0,053	0,050
3	aniz367	0,033	0,056	0,055	0,032	0,049	0,042	0,030	0,040	0,036
4	anla484	0,023	0,065	0,053	0,021	0,064	0,053	0,020	0,055	0,050
5	anla7	0,063	0,042	0,036	0,063	0,041	0,031	0,059	0,043	0,027
6	anpan13	0,040	0,047	0,075	0,039	0,040	0,062	0,036	0,042	0,067
7	anpe409	0,065	0,040	0,057	0,063	0,039	0,056	0,060	0,038	0,054
8	anpe440	0,037	0,067	0,056	0,033	0,064	0,056	0,036	0,056	0,051
9	ansa120	0,035	0,061	0,048	0,033	0,041	0,040	0,031	0,047	0,038
10	arsu460	0,030	0,046	0,053	0,029	0,046	0,053	0,028	0,045	0,052
11	bami523	0,054	0,052	0,068	0,039	0,051	0,085	0,037	0,041	0,054
12	brti103	0,051	0,048	0,066	0,051	0,045	0,057	0,050	0,044	0,053
13	cabo441	0,065	0,070	0,048	0,056	0,068	0,045	0,045	0,069	0,044
14	caca55	0,034	0,043	0,052	0,034	0,042	0,051	0,029	0,041	0,051
15	cama505	0,036	0,033	0,045	0,032	0,030	0,044	0,031	0,020	0,033
16	caro420	0,038	0,043	0,037	0,037	0,041	0,041	0,034	0,034	0,035
17	chce155	0,050	0,038	0,033	0,048	0,034	0,027	0,047	0,033	0,033
18	clbe483	0,025	0,030	0,035	0,024	0,030	0,034	0,024	0,030	0,034
19	criquat14	0,047	0,054	0,080	0,046	0,050	0,079	0,046	0,050	0,079
20	crta129	0,026	0,047	0,045	0,025	0,040	0,036	0,021	0,048	0,048
21	dabe206	0,026	0,091	0,115	0,028	0,090	0,113	0,023	0,090	0,107
22	dalo334	0,044	0,074	0,071	0,042	0,068	0,062	0,038	0,075	0,067
23	debo349	0,055	0,047	0,077	0,047	0,047	0,077	0,045	0,047	0,069
24	dima287	0,051	0,033	0,032	0,048	0,034	0,027	0,045	0,038	0,026
25	dipi365	0,050	0,079	0,081	0,042	0,074	0,064	0,040	0,071	0,059
26	doca447	0,030	0,052	0,037	0,026	0,040	0,034	0,025	0,044	0,034
27	dogi445	0,062	0,042	0,046	0,060	0,038	0,034	0,057	0,040	0,036
28	elca122	0,027	0,034	0,041	0,024	0,039	0,035	0,022	0,033	0,033
29	eliv342	0,051	0,050	0,051	0,051	0,049	0,050	0,048	0,048	0,046
30	eman525	0,050	0,050	0,041	0,050	0,049	0,040	0,049	0,049	0,039
31	esa8	0,042	0,049	0,047	0,042	0,050	0,046	0,033	0,049	0,045
32	fead421	0,045	0,055	0,032	0,046	0,057	0,025	0,038	0,054	0,031
33	fibl275	0,042	0,049	0,051	0,040	0,042	0,038	0,037	0,040	0,041
34	fipa355	0,060	0,051	0,044	0,059	0,042	0,043	0,056	0,046	0,041

Ra (mm)		T0			T15			T30		
N°	Vol. Code	Forehead	L	R	Forehead	L	R	Forehead	L	R
35	frga90	0,026	0,036	0,042	0,024	0,040	0,042	0,019	0,037	0,033
36	frma177	0,043	0,052	0,053	0,039	0,051	0,053	0,037	0,051	0,052
37	gaam497	0,047	0,047	0,050	0,042	0,044	0,048	0,040	0,043	0,047
38	gabr259	0,046	0,041	0,046	0,040	0,030	0,028	0,036	0,026	0,023
39	gati441	0,061	0,034	0,044	0,059	0,035	0,043	0,045	0,032	0,043
40	gica434	0,049	0,034	0,032	0,044	0,029	0,024	0,041	0,025	0,020
41	giga455	0,044	0,030	0,044	0,037	0,030	0,044	0,036	0,029	0,042
42	gigr222	0,035	0,038	0,069	0,035	0,037	0,068	0,034	0,034	0,064
43	gima500	0,020	0,039	0,035	0,018	0,033	0,035	0,017	0,033	0,033
44	gipi527	0,038	0,038	0,033	0,034	0,041	0,027	0,029	0,037	0,031
45	giufi20	0,068	0,049	0,055	0,063	0,048	0,055	0,058	0,046	0,054
46	kadi493	0,041	0,034	0,043	0,037	0,034	0,043	0,035	0,033	0,042
47	lalom4	0,031	0,066	0,070	0,031	0,066	0,061	0,031	0,063	0,057
48	lata251	0,020	0,061	0,040	0,020	0,057	0,043	0,019	0,055	0,043
49	lili254	0,057	0,054	0,047	0,051	0,055	0,042	0,050	0,052	0,044
50	liva137	0,060	0,062	0,067	0,058	0,054	0,051	0,052	0,053	0,056
51	lode61	0,063	0,042	0,036	0,063	0,041	0,031	0,059	0,043	0,027
52	loma2	0,050	0,041	0,035	0,040	0,034	0,031	0,040	0,032	0,031
53	lopo479	0,040	0,070	0,069	0,039	0,067	0,061	0,036	0,064	0,057
54	lotu144	0,065	0,072	0,065	0,053	0,066	0,061	0,047	0,064	0,059
55	lual476	0,035	0,044	0,045	0,033	0,041	0,045	0,038	0,040	0,045
56	lubel22	0,060	0,055	0,059	0,060	0,054	0,056	0,053	0,054	0,056
57	lude228	0,033	0,037	0,045	0,034	0,037	0,045	0,029	0,037	0,045
58	ludi5	0,071	0,029	0,048	0,070	0,030	0,047	0,061	0,034	0,047
59	lufiu18	0,052	0,061	0,040	0,044	0,038	0,032	0,047	0,051	0,031
60	luge86	0,025	0,033	0,044	0,022	0,032	0,042	0,019	0,037	0,036
61	lupr276	0,039	0,042	0,027	0,036	0,033	0,024	0,036	0,038	0,022
62	luri265	0,075	0,036	0,034	0,074	0,031	0,026	0,069	0,030	0,024
63	lute520	0,058	0,047	0,049	0,050	0,045	0,051	0,048	0,042	0,050
64	lutuc9	0,036	0,039	0,037	0,035	0,036	0,031	0,034	0,037	0,032
65	maal258	0,049	0,078	0,079	0,047	0,069	0,065	0,044	0,065	0,060
66	maap492	0,036	0,052	0,051	0,032	0,051	0,050	0,031	0,050	0,049
67	maca268	0,025	0,099	0,088	0,023	0,079	0,077	0,021	0,090	0,083
68	maca64	0,042	0,036	0,061	0,040	0,036	0,061	0,041	0,035	0,061
69	macat1	0,023	0,049	0,052	0,022	0,048	0,051	0,022	0,045	0,051
70	made135	0,046	0,081	0,082	0,034	0,073	0,076	0,043	0,074	0,070

Ra (mm)		T0			T15			T30		
N°	Vol. Code	Forehead	L	R	Forehead	L	R	Forehead	L	R
71	malu257	0,064	0,051	0,049	0,059	0,048	0,039	0,054	0,044	0,030
72	mama444	0,042	0,049	0,051	0,039	0,043	0,040	0,037	0,047	0,048
73	mela164	0,069	0,037	0,032	0,063	0,034	0,028	0,061	0,030	0,029
74	migi167	0,047	0,038	0,050	0,046	0,040	0,046	0,038	0,041	0,059
75	miro432	0,031	0,024	0,023	0,028	0,024	0,015	0,024	0,026	0,025
76	mobe354	0,047	0,056	0,051	0,040	0,051	0,042	0,037	0,049	0,044
77	more267	0,045	0,025	0,026	0,038	0,024	0,019	0,035	0,026	0,023
78	nagr443	0,037	0,053	0,052	0,036	0,047	0,050	0,034	0,045	0,049
79	nama501	0,062	0,047	0,046	0,060	0,043	0,038	0,059	0,039	0,037
80	paba487	0,034	0,073	0,093	0,034	0,071	0,092	0,033	0,064	0,088
81	pamu418	0,042	0,042	0,065	0,033	0,040	0,062	0,039	0,040	0,061
82	pavi307	0,058	0,055	0,052	0,058	0,054	0,052	0,056	0,048	0,046
83	pivi463	0,042	0,038	0,032	0,040	0,031	0,024	0,032	0,037	0,025
84	rast348	0,074	0,095	0,088	0,073	0,095	0,076	0,071	0,080	0,071
85	ricl480	0,072	0,076	0,055	0,069	0,075	0,049	0,064	0,073	0,049
86	riia62	0,499	0,040	0,051	0,462	0,040	0,050	0,425	0,034	0,048
87	roca128	0,043	0,042	0,044	0,039	0,041	0,041	0,038	0,036	0,046
88	roia359	0,050	0,068	0,069	0,050	0,062	0,055	0,034	0,058	0,048
89	romi370	0,074	0,110	0,095	0,072	0,109	0,074	0,071	0,099	0,062
90	rote181	0,086	0,107	0,081	0,083	0,101	0,078	0,083	0,104	0,075
91	rova262	0,046	0,036	0,039	0,039	0,036	0,036	0,037	0,035	0,035
92	saca272	0,068	0,048	0,045	0,055	0,054	0,040	0,053	0,058	0,042
93	saca38	0,032	0,024	0,026	0,032	0,024	0,025	0,029	0,021	0,022
94	sagi270	0,034	0,029	0,030	0,029	0,028	0,027	0,025	0,028	0,026
95	sapo213	0,081	0,082	0,073	0,079	0,081	0,073	0,076	0,081	0,070
96	sigi469	0,032	0,033	0,037	0,028	0,032	0,031	0,026	0,037	0,034
97	tecri3	0,040	0,037	0,044	0,036	0,038	0,028	0,035	0,035	0,034
98	tiba281	0,050	0,032	0,034	0,049	0,028	0,021	0,045	0,035	0,030
99	tira309	0,059	0,059	0,050	0,055	0,057	0,049	0,053	0,054	0,043
100	vidi524	0,033	0,058	0,053	0,030	0,056	0,050	0,030	0,054	0,055
MEAN		**0,051**	**0,051**	**0,052**	**0,047**	**0,048**	**0,047**	**0,044**	**0,047**	**0,046**

Ra % variations

Ra % variation		% variation T15 vs T0			% variation T30 vs T0		
N°	Vol. Code	Forehead	L	R	Forehead	L	R
1	adci526	-0,19%	-9,32%	-7,62%	-6,41%	-0,22%	-1,93%
2	ancon12	-7,36%	-1,73%	-9,45%	-7,29%	-5,39%	-11,37%
3	aniz367	-4,15%	-12,50%	-23,64%	-9,60%	-28,57%	-34,55%
4	anla484	-10,68%	-1,51%	-0,11%	-14,10%	-15,56%	-4,88%
5	anla7	-1,04%	-3,28%	-15,44%	-6,83%	1,95%	-26,53%
6	anpan13	-0,70%	-15,57%	-16,85%	-10,01%	-11,46%	-11,22%
7	anpe409	-3,13%	-1,57%	-1,36%	-8,09%	-3,64%	-5,25%
8	anpe440	-10,28%	-4,02%	-0,26%	-1,77%	-15,46%	-9,18%
9	ansa120	-6,53%	-32,48%	-16,64%	-12,78%	-23,47%	-19,80%
10	arsu460	-1,73%	-1,15%	-1,08%	-4,10%	-3,09%	-3,14%
11	bami523	-28,19%	-0,65%	24,70%	-32,03%	-20,35%	-20,81%
12	brti103	0,13%	-6,47%	-14,75%	-1,37%	-9,52%	-20,55%
13	cabo441	-13,83%	-3,18%	-6,45%	-30,90%	-2,13%	-9,03%
14	caca55	0,93%	-1,11%	-2,10%	-14,35%	-2,93%	-2,27%
15	cama505	-10,14%	-9,57%	-3,62%	-13,52%	-39,88%	-27,00%
16	caro420	-2,51%	-4,69%	10,34%	-12,62%	-20,64%	-4,85%
17	chce155	-3,56%	-9,33%	-19,32%	-7,07%	-11,04%	-1,34%
18	clbe483	-3,16%	2,20%	-1,46%	-4,33%	0,41%	-2,57%
19	criquat14	-2,88%	-7,88%	-1,46%	-2,70%	-8,68%	-0,83%
20	crta129	-4,98%	-14,89%	-20,00%	-20,69%	2,13%	6,67%
21	dabe206	9,94%	-0,23%	-2,19%	-10,21%	-1,09%	-7,28%
22	dalo334	-5,07%	-8,11%	-12,68%	-14,92%	1,35%	-5,63%
23	debo349	-14,32%	-0,50%	0,18%	-18,01%	-1,05%	-10,58%
24	dima287	-6,30%	2,12%	-17,28%	-11,22%	15,53%	-18,84%
25	dipi365	-14,92%	-6,33%	-20,99%	-18,45%	-10,13%	-27,16%
26	doca447	-10,63%	-23,34%	-6,67%	-14,52%	-15,04%	-7,08%
27	dogi445	-2,60%	-9,52%	-26,09%	-6,99%	-4,76%	-21,74%
28	elca122	-8,61%	14,03%	-14,11%	-18,35%	-5,10%	-18,66%
29	eliv342	-0,42%	-2,02%	-1,53%	-5,28%	-4,16%	-10,22%
30	eman525	-1,13%	-2,05%	-2,07%	-3,90%	-2,64%	-5,03%
31	esa8	-0,75%	3,49%	-2,99%	-21,97%	0,53%	-4,33%
32	fead421	2,33%	2,97%	-19,14%	-15,15%	-3,21%	-1,55%
33	fibl275	-3,30%	-14,29%	-25,49%	-10,25%	-18,37%	-19,61%
34	fipa355	-1,34%	-17,70%	-0,54%	-5,69%	-10,29%	-5,13%

Ra % variation		% variation T15 vs T0			% variation T30 vs T0		
N°	Vol. Code	Forehead	L	R	Forehead	L	R
35	frga90	-7,63%	10,33%	-1,35%	-26,55%	2,81%	-21,12%
36	frma177	-9,35%	-1,81%	-0,13%	-12,68%	-1,66%	-2,06%
37	gaam497	-10,52%	-6,44%	-2,93%	-13,95%	-8,87%	-4,41%
38	gabr259	-12,94%	-26,01%	-38,72%	-20,99%	-36,80%	-49,67%
39	gati441	-2,30%	3,04%	-3,20%	-26,07%	-3,35%	-3,99%
40	gica434	-9,90%	-14,71%	-25,00%	-16,85%	-26,47%	-37,50%
41	giga455	-16,77%	-0,64%	-0,72%	-17,65%	-3,07%	-4,76%
42	gigr222	-2,36%	-2,15%	-1,61%	-5,48%	-10,81%	-7,99%
43	gima500	-8,04%	-16,23%	0,30%	-13,57%	-16,83%	-6,31%
44	gipi527	-9,07%	8,92%	-20,32%	-21,60%	-2,04%	-7,11%
45	giufi20	-7,39%	-3,24%	0,18%	-13,71%	-6,03%	-2,27%
46	kadi493	-9,67%	-1,88%	0,58%	-15,25%	-2,20%	-0,76%
47	lalom4	-0,70%	0,16%	-13,15%	-1,68%	-4,75%	-18,51%
48	lata251	-0,98%	-6,95%	7,13%	-5,87%	-10,29%	6,23%
49	lili254	-10,48%	3,07%	-9,74%	-11,70%	-3,46%	-4,90%
50	liva137	-3,81%	-12,90%	-23,88%	-13,25%	-14,52%	-16,42%
51	lode61	-1,04%	-3,28%	-15,44%	-6,83%	1,95%	-26,53%
52	loma2	-19,51%	-18,31%	-11,12%	-19,92%	-21,71%	-12,55%
53	lopo479	-1,75%	-4,50%	-11,82%	-11,47%	-8,99%	-17,31%
54	lotu144	-19,42%	-8,16%	-5,07%	-28,08%	-10,78%	-9,39%
55	lual476	-4,56%	-6,98%	0,43%	9,04%	-8,01%	-1,02%
56	lubel22	-0,31%	-3,28%	-4,16%	-12,61%	-3,31%	-4,22%
57	lude228	0,77%	0,16%	-0,13%	-14,19%	-1,10%	0,45%
58	ludi5	-1,89%	4,68%	-1,77%	-14,77%	17,81%	-2,40%
59	lufiu18	-16,97%	-37,24%	-19,76%	-9,58%	-16,19%	-21,82%
60	luge86	-12,49%	-3,38%	-4,83%	-23,34%	12,27%	-18,63%
61	lupr276	-7,82%	-22,38%	-11,53%	-7,75%	-9,12%	-18,51%
62	luri265	-1,74%	-13,89%	-23,53%	-8,35%	-16,67%	-29,41%
63	lute520	-13,35%	-2,92%	3,15%	-17,24%	-10,65%	2,59%
64	lutuc9	-2,74%	-7,69%	-16,22%	-7,84%	-5,13%	-13,51%
65	maal258	-3,65%	-11,54%	-17,72%	-10,92%	-16,67%	-24,05%
66	maap492	-11,22%	-2,89%	-3,06%	-13,50%	-3,86%	-4,08%
67	maca268	-11,33%	-20,49%	-12,86%	-17,72%	-9,39%	-6,36%
68	maca64	-4,81%	-0,44%	-0,37%	-3,05%	-3,40%	-0,45%
69	macat1	-3,08%	-2,33%	-0,62%	-2,65%	-7,57%	-2,18%
70	made135	-24,38%	-9,76%	-6,63%	-6,41%	-9,14%	-14,84%

Ra % variation		% variation T15 vs T0			% variation T30 vs T0		
N°	Vol. Code	Forehead	L	R	Forehead	L	R
71	malu257	-7,24%	-5,88%	-20,41%	-15,34%	-13,73%	-38,78%
72	mama444	-6,60%	-12,24%	-21,57%	-11,24%	-4,08%	-5,88%
73	mela164	-9,19%	-8,16%	-12,33%	-11,67%	-18,96%	-9,20%
74	migi167	-2,16%	5,34%	-9,15%	-19,69%	6,92%	17,61%
75	miro432	-7,84%	-1,57%	-35,50%	-23,02%	9,05%	7,24%
76	mobe354	-14,58%	-8,93%	-17,65%	-20,00%	-12,50%	-13,73%
77	more267	-15,15%	-4,00%	-26,92%	-22,14%	4,00%	-11,54%
78	nagr443	-2,45%	-10,20%	-3,56%	-6,28%	-13,80%	-6,77%
79	nama501	-2,75%	-8,51%	-17,39%	-4,37%	-17,02%	-19,57%
80	paba487	-1,35%	-2,21%	-1,80%	-2,77%	-12,11%	-5,14%
81	pamu418	-21,40%	-4,27%	-5,21%	-8,50%	-3,59%	-6,99%
82	pavi307	-1,12%	-2,23%	-0,79%	-3,94%	-12,77%	-12,32%
83	pivi463	-5,25%	-18,68%	-25,90%	-24,11%	-2,78%	-24,13%
84	rast348	-1,29%	-0,11%	-13,85%	-3,70%	-15,63%	-19,68%
85	ricl480	-3,93%	-2,00%	-9,82%	-10,47%	-3,92%	-11,20%
86	riia62	-7,41%	0,00%	-0,75%	-14,83%	-13,50%	-5,19%
87	roca128	-8,20%	-3,27%	-6,82%	-10,30%	-13,89%	3,76%
88	roia359	-1,32%	-8,82%	-20,29%	-31,99%	-14,71%	-30,43%
89	romi370	-2,06%	-0,14%	-22,17%	-4,20%	-9,19%	-35,15%
90	rote181	-3,02%	-5,23%	-4,14%	-3,69%	-3,01%	-8,31%
91	rova262	-14,40%	-2,09%	-7,65%	-19,93%	-3,12%	-11,13%
92	saca272	-19,39%	12,56%	-11,08%	-22,12%	20,64%	-6,25%
93	saca38	0,11%	0,87%	-2,26%	-8,34%	-12,86%	-15,40%
94	sagi270	-14,66%	-4,44%	-12,27%	-24,18%	-2,02%	-14,06%
95	sapo213	-1,59%	-1,20%	0,24%	-6,18%	-2,23%	-3,39%
96	sigi469	-12,85%	-3,52%	-16,50%	-17,24%	12,44%	-6,21%
97	tecri3	-10,62%	1,50%	-37,37%	-13,42%	-7,75%	-23,00%
98	tiba281	-1,33%	-12,50%	-38,24%	-10,08%	9,38%	-11,76%
99	tira309	-6,83%	-3,15%	-3,01%	-9,69%	-7,63%	-13,31%
100	vidi524	-7,04%	-3,93%	-5,57%	-9,78%	-7,16%	2,64%
MEAN		**-6,67%**	**-5,59%**	**-9,83%**	**-12,53%**	**-7,20%**	**-11,16%**

Raw data of Rz parameter (in mm)

Rz (mm)		T0			T15			T30		
N°	Vol. Code	Forehead	L	R	Forehead	L	R	Forehead	L	R
1	adci526	0,155	0,104	0,099	0,148	0,091	0,095	0,143	0,097	0,093
2	ancon12	0,096	0,176	0,178	0,078	0,170	0,172	0,088	0,165	0,166
3	aniz367	0,116	0,124	0,121	0,108	0,120	0,110	0,094	0,100	0,097
4	anla484	0,129	0,111	0,131	0,126	0,107	0,098	0,109	0,089	0,119
5	anla7	0,156	0,145	0,144	0,150	0,131	0,122	0,147	0,095	0,129
6	anpan13	0,123	0,140	0,197	0,114	0,121	0,168	0,111	0,134	0,180
7	anpe409	0,171	0,114	0,150	0,164	0,115	0,149	0,158	0,106	0,146
8	anpe440	0,108	0,173	0,152	0,094	0,159	0,150	0,106	0,150	0,145
9	ansa120	0,171	0,106	0,102	0,169	0,101	0,091	0,148	0,100	0,083
10	arsu460	0,196	0,143	0,162	0,187	0,139	0,160	0,182	0,135	0,157
11	bami523	0,126	0,159	0,199	0,124	0,159	0,175	0,118	0,133	0,154
12	brti103	0,164	0,154	0,199	0,154	0,149	0,155	0,159	0,136	0,162
13	cabo441	0,162	0,195	0,142	0,153	0,186	0,132	0,126	0,181	0,129
14	caca55	0,101	0,152	0,163	0,098	0,143	0,156	0,090	0,128	0,141
15	cama505	0,149	0,158	0,156	0,143	0,150	0,136	0,125	0,148	0,135
16	caro420	0,111	0,119	0,115	0,111	0,116	0,113	0,102	0,111	0,106
17	chce155	0,129	0,116	0,148	0,124	0,115	0,122	0,119	0,114	0,121
18	clbe483	0,079	0,090	0,094	0,078	0,091	0,091	0,070	0,089	0,090
19	criquat14	0,133	0,153	0,178	0,124	0,130	0,176	0,119	0,128	0,171
20	crta129	0,129	0,176	0,172	0,126	0,165	0,147	0,113	0,168	0,153
21	dabe206	0,089	0,279	0,285	0,072	0,274	0,283	0,068	0,264	0,270
22	dalo334	0,131	0,236	0,236	0,114	0,218	0,158	0,106	0,214	0,199
23	debo349	0,121	0,125	0,215	0,101	0,123	0,202	0,092	0,122	0,191
24	dima287	0,112	0,167	0,169	0,107	0,152	0,143	0,095	0,150	0,149
25	dipi365	0,151	0,158	0,152	0,136	0,153	0,136	0,113	0,152	0,135
26	doca447	0,081	0,137	0,134	0,075	0,111	0,127	0,071	0,124	0,125
27	dogi445	0,169	0,114	0,091	0,148	0,103	0,081	0,129	0,101	0,085
28	elca122	0,160	0,112	0,105	0,146	0,100	0,084	0,126	0,098	0,088
29	eliv342	0,164	0,172	0,154	0,154	0,162	0,147	0,151	0,145	0,143
30	eman525	0,118	0,133	0,118	0,115	0,130	0,116	0,110	0,127	0,111
31	esa8	0,132	0,129	0,130	0,128	0,126	0,115	0,103	0,124	0,128
32	fead421	0,122	0,137	0,093	0,122	0,134	0,080	0,097	0,131	0,093
33	fibl275	0,081	0,125	0,125	0,074	0,121	0,109	0,066	0,118	0,107
34	fipa355	0,188	0,072	0,074	0,164	0,072	0,063	0,137	0,068	0,060

Rz (mm)		T0			T15			T30		
N°	Vol. Code	Forehead	L	R	Forehead	L	R	Forehead	L	R
35	frga90	0,136	0,192	0,201	0,126	0,184	0,156	0,119	0,180	0,167
36	frma177	0,120	0,140	0,149	0,108	0,141	0,139	0,102	0,137	0,136
37	gaam497	0,107	0,208	0,221	0,091	0,198	0,174	0,082	0,190	0,195
38	gabr259	0,208	0,148	0,156	0,194	0,133	0,115	0,173	0,136	0,127
39	gati441	0,173	0,119	0,135	0,162	0,117	0,127	0,151	0,114	0,125
40	gica434	0,186	0,117	0,095	0,172	0,108	0,083	0,157	0,106	0,085
41	giga455	0,117	0,120	0,117	0,099	0,115	0,112	0,094	0,109	0,106
42	gigr222	0,087	0,118	0,197	0,082	0,115	0,192	0,079	0,114	0,174
43	gima500	0,218	0,129	0,124	0,204	0,126	0,093	0,194	0,124	0,092
44	gipi527	0,149	0,140	0,139	0,137	0,138	0,119	0,129	0,136	0,125
45	giufi20	0,213	0,150	0,160	0,194	0,144	0,159	0,185	0,133	0,151
46	kadi493	0,119	0,125	0,132	0,115	0,118	0,128	0,101	0,113	0,126
47	lalom4	0,121	0,198	0,199	0,116	0,184	0,169	0,105	0,178	0,154
48	lata251	0,173	0,133	0,126	0,157	0,128	0,112	0,131	0,126	0,110
49	lili254	0,119	0,130	0,135	0,105	0,126	0,105	0,094	0,111	0,132
50	liva137	0,183	0,112	0,112	0,164	0,108	0,092	0,149	0,106	0,095
51	lode61	0,214	0,161	0,161	0,207	0,133	0,158	0,194	0,152	0,135
52	loma2	0,133	0,088	0,062	0,125	0,080	0,057	0,123	0,087	0,056
53	lopo479	0,131	0,116	0,123	0,114	0,109	0,102	0,108	0,107	0,120
54	lotu144	0,178	0,182	0,183	0,158	0,179	0,181	0,126	0,172	0,179
55	lual476	0,094	0,115	0,124	0,084	0,109	0,124	0,077	0,104	0,117
56	lubel22	0,165	0,175	0,164	0,160	0,169	0,164	0,125	0,158	0,163
57	lude228	0,099	0,109	0,118	0,101	0,108	0,109	0,095	0,103	0,116
58	ludi5	0,183	0,128	0,088	0,148	0,127	0,069	0,135	0,122	0,068
59	lufiu18	0,163	0,162	0,099	0,127	0,160	0,093	0,141	0,131	0,095
60	luge86	0,214	0,195	0,184	0,189	0,167	0,134	0,185	0,160	0,145
61	lupr276	0,165	0,120	0,140	0,138	0,119	0,122	0,114	0,115	0,134
62	luri265	0,095	0,095	0,101	0,083	0,088	0,082	0,073	0,089	0,078
63	lute520	0,174	0,132	0,129	0,157	0,128	0,130	0,153	0,125	0,129
64	lutuc9	0,198	0,246	0,242	0,195	0,213	0,195	0,171	0,223	0,208
65	maal258	0,095	0,125	0,130	0,085	0,119	0,112	0,082	0,120	0,115
66	maap492	0,116	0,186	0,185	0,087	0,156	0,180	0,089	0,143	0,174
67	maca268	0,110	0,156	0,157	0,100	0,146	0,126	0,089	0,149	0,131
68	maca64	0,146	0,122	0,158	0,125	0,120	0,148	0,133	0,118	0,143
69	macat1	0,068	0,113	0,135	0,068	0,110	0,133	0,068	0,103	0,130
70	made135	0,139	0,233	0,239	0,129	0,217	0,224	0,115	0,217	0,201

Rz (mm)		T0			T15			T30		
N°	Vol. Code	Forehead	L	R	Forehead	L	R	Forehead	L	R
71	malu257	0,148	0,202	0,162	0,132	0,178	0,158	0,118	0,176	0,145
72	mama444	0,166	0,241	0,248	0,141	0,197	0,237	0,132	0,204	0,230
73	mela164	0,215	0,188	0,184	0,197	0,167	0,149	0,180	0,160	0,140
74	migi167	0,102	0,152	0,141	0,099	0,145	0,128	0,092	0,142	0,127
75	miro432	0,127	0,173	0,181	0,121	0,167	0,135	0,111	0,173	0,142
76	mobe354	0,164	0,159	0,165	0,156	0,148	0,126	0,138	0,138	0,120
77	more267	0,107	0,189	0,194	0,103	0,158	0,182	0,091	0,146	0,156
78	nagr443	0,138	0,132	0,144	0,131	0,119	0,141	0,123	0,130	0,140
79	nama501	0,200	0,150	0,065	0,193	0,130	0,065	0,167	0,125	0,064
80	paba487	0,105	0,196	0,214	0,103	0,179	0,208	0,102	0,180	0,173
81	pamu418	0,118	0,112	0,161	0,093	0,105	0,151	0,116	0,102	0,140
82	pavi307	0,189	0,167	0,154	0,177	0,150	0,153	0,176	0,142	0,137
83	pivi463	0,167	0,147	0,154	0,152	0,138	0,119	0,134	0,135	0,134
84	rast348	0,194	0,147	0,138	0,182	0,131	0,105	0,176	0,142	0,119
85	ricl480	0,160	0,228	0,138	0,143	0,145	0,128	0,159	0,134	0,124
86	riia62	0,155	0,119	0,108	0,137	0,113	0,082	0,127	0,120	0,103
87	roca128	0,183	0,120	0,137	0,165	0,108	0,125	0,152	0,103	0,119
88	roia359	0,127	0,152	0,151	0,113	0,143	0,135	0,106	0,141	0,133
89	romi370	0,167	0,366	0,256	0,164	0,286	0,247	0,159	0,252	0,241
90	rote181	0,132	0,260	0,227	0,130	0,254	0,212	0,127	0,247	0,226
91	rova262	0,099	0,113	0,094	0,094	0,106	0,093	0,093	0,102	0,090
92	saca272	0,164	0,132	0,123	0,149	0,126	0,106	0,132	0,105	0,100
93	saca38	0,103	0,081	0,080	0,098	0,079	0,074	0,090	0,067	0,066
94	sagi270	0,187	0,140	0,139	0,176	0,130	0,116	0,162	0,119	0,102
95	sapo213	0,159	0,243	0,198	0,146	0,239	0,196	0,140	0,229	0,192
96	sigi469	0,151	0,179	0,156	0,148	0,141	0,131	0,136	0,129	0,120
97	tecri3	0,169	0,210	0,192	0,166	0,199	0,177	0,148	0,180	0,142
98	tiba281	0,160	0,120	0,122	0,154	0,115	0,105	0,146	0,104	0,098
99	tira309	0,163	0,132	0,136	0,157	0,127	0,135	0,146	0,125	0,125
100	vidi524	0,110	0,182	0,150	0,106	0,134	0,128	0,102	0,136	0,147
MEAN		**0,144**	**0,153**	**0,151**	**0,133**	**0,141**	**0,135**	**0,123**	**0,136**	**0,134**

Rz % variations

Rz % variation		% variation T15 vs T0			% variation T30 vs T0		
N°	Vol. Code	Forehead	L	R	Forehead	L	R
1	adci526	-4,34%	-12,22%	-3,88%	-8,02%	-6,07%	-5,83%
2	ancon12	-18,68%	-3,21%	-3,56%	-9,24%	-6,16%	-6,88%
3	aniz367	-6,49%	-3,24%	-9,34%	-18,66%	-19,29%	-19,87%
4	anla484	-2,79%	-3,63%	-25,39%	-15,61%	-20,11%	-9,04%
5	anla7	-3,88%	-9,88%	-14,97%	-6,00%	-34,85%	-10,23%
6	anpan13	-7,52%	-14,05%	-14,90%	-10,24%	-4,77%	-8,90%
7	anpe409	-4,18%	1,13%	-0,58%	-7,20%	-7,00%	-2,73%
8	anpe440	-12,92%	-8,04%	-1,13%	-2,29%	-13,75%	-4,55%
9	ansa120	-1,09%	-4,66%	-10,32%	-13,43%	-5,82%	-18,41%
10	arsu460	-4,37%	-2,84%	-0,98%	-6,92%	-5,64%	-2,84%
11	bami523	-1,24%	-0,34%	-11,99%	-6,28%	-16,30%	-22,49%
12	brti103	-6,24%	-3,17%	-21,90%	-2,72%	-11,52%	-18,71%
13	cabo441	-6,12%	-5,03%	-7,04%	-22,67%	-7,41%	-9,56%
14	caca55	-3,34%	-5,78%	-4,07%	-11,61%	-15,75%	-13,54%
15	cama505	-4,28%	-5,06%	-12,82%	-16,56%	-6,33%	-13,46%
16	caro420	-0,32%	-3,10%	-1,15%	-8,46%	-6,91%	-7,66%
17	chce155	-3,94%	-1,31%	-17,45%	-7,14%	-2,23%	-18,14%
18	clbe483	-1,94%	1,06%	-3,41%	-11,41%	-0,74%	-5,06%
19	criquat14	-6,44%	-14,58%	-1,08%	-9,98%	-15,92%	-4,29%
20	crta129	-2,50%	-6,25%	-14,53%	-12,19%	-4,55%	-11,05%
21	dabe206	-18,59%	-1,98%	-0,96%	-23,11%	-5,33%	-5,42%
22	dalo334	-12,99%	-7,54%	-32,95%	-19,14%	-9,09%	-15,60%
23	debo349	-16,07%	-1,51%	-6,25%	-24,20%	-2,20%	-11,04%
24	dima287	-4,23%	-8,98%	-15,38%	-15,15%	-10,18%	-11,83%
25	dipi365	-9,75%	-3,31%	-10,55%	-25,24%	-4,12%	-11,32%
26	doca447	-8,02%	-18,81%	-5,50%	-12,17%	-9,57%	-6,59%
27	dogi445	-12,26%	-9,93%	-10,87%	-23,62%	-11,68%	-6,47%
28	elca122	-8,79%	-10,72%	-20,29%	-21,25%	-12,10%	-16,56%
29	eliv342	-6,46%	-5,88%	-4,98%	-8,21%	-15,76%	-6,98%
30	eman525	-2,65%	-2,10%	-2,04%	-6,89%	-4,36%	-6,26%
31	esa8	-3,00%	-2,90%	-11,33%	-22,27%	-4,45%	-0,98%
32	fead421	-0,09%	-1,94%	-13,71%	-20,39%	-4,22%	-0,60%
33	fibl275	-9,17%	-3,03%	-13,30%	-18,99%	-5,69%	-15,07%
34	fipa355	-12,96%	-0,06%	-14,82%	-27,38%	-4,66%	-19,52%

Rz % variation		% variation T15 vs T0			% variation T30 vs T0		
N°	Vol. Code	Forehead	L	R	Forehead	L	R
35	frga90	-7,43%	-4,17%	-22,39%	-12,85%	-6,25%	-16,92%
36	frma177	-9,88%	0,15%	-6,68%	-14,40%	-2,58%	-8,90%
37	gaam497	-14,95%	-4,81%	-21,27%	-23,36%	-8,65%	-11,76%
38	gabr259	-6,73%	-10,14%	-26,28%	-16,83%	-8,11%	-18,59%
39	gati441	-6,56%	-1,56%	-6,13%	-12,76%	-3,95%	-7,77%
40	gica434	-7,53%	-7,26%	-12,16%	-15,59%	-9,78%	-10,81%
41	giga455	-15,71%	-3,62%	-4,36%	-19,80%	-9,17%	-9,38%
42	gigr222	-5,30%	-2,53%	-2,41%	-8,22%	-3,35%	-11,73%
43	gima500	-6,42%	-2,09%	-25,24%	-11,01%	-3,84%	-25,70%
44	gipi527	-8,05%	-1,43%	-14,39%	-13,42%	-2,86%	-10,07%
45	giufi20	-8,85%	-3,89%	-0,70%	-13,10%	-11,08%	-5,80%
46	kadi493	-3,61%	-6,10%	-3,50%	-15,21%	-10,19%	-4,53%
47	lalom4	-4,31%	-7,04%	-14,92%	-13,66%	-9,98%	-22,78%
48	lata251	-9,25%	-3,76%	-11,11%	-24,28%	-5,26%	-12,70%
49	lili254	-11,76%	-3,08%	-22,30%	-21,01%	-14,83%	-2,01%
50	liva137	-10,38%	-3,55%	-17,90%	-18,58%	-5,66%	-15,45%
51	lode61	-3,27%	-17,44%	-1,87%	-9,35%	-5,77%	-16,34%
52	loma2	-6,17%	-8,27%	-9,01%	-7,57%	-1,26%	-9,88%
53	lopo479	-13,33%	-6,03%	-17,07%	-17,65%	-7,76%	-2,44%
54	lotu144	-10,86%	-1,39%	-1,07%	-28,84%	-5,36%	-2,10%
55	lual476	-10,73%	-5,21%	-0,09%	-18,56%	-9,84%	-5,75%
56	lubel22	-2,77%	-3,78%	0,10%	-23,91%	-9,89%	-0,85%
57	lude228	1,46%	-1,03%	-7,73%	-4,20%	-5,79%	-1,73%
58	ludi5	-19,07%	-0,68%	-21,81%	-26,25%	-4,68%	-23,11%
59	lufiu18	-22,03%	-1,58%	-6,19%	-13,51%	-19,49%	-4,13%
60	luge86	-11,56%	-14,36%	-27,17%	-13,41%	-17,95%	-21,20%
61	lupr276	-16,58%	-1,23%	-12,46%	-31,12%	-4,36%	-4,00%
62	luri265	-12,51%	-8,06%	-18,18%	-22,48%	-6,72%	-22,39%
63	lute520	-9,55%	-3,47%	0,44%	-11,88%	-5,64%	-0,65%
64	lutuc9	-1,56%	-13,21%	-19,69%	-13,26%	-9,00%	-14,32%
65	maal258	-10,79%	-4,80%	-13,85%	-13,41%	-4,00%	-11,54%
66	maap492	-25,32%	-16,53%	-3,06%	-23,42%	-23,31%	-6,34%
67	maca268	-9,01%	-6,41%	-19,75%	-18,83%	-4,49%	-16,56%
68	maca64	-14,61%	-1,30%	-6,58%	-8,80%	-3,04%	-9,26%
69	macat1	0,00%	-2,86%	-1,91%	-1,00%	-8,39%	-3,43%
70	made135	-6,95%	-6,77%	-6,47%	-17,21%	-6,82%	-15,86%

Rz % variation		% variation T15 vs T0			% variation T30 vs T0		
N°	Vol. Code	Forehead	L	R	Forehead	L	R
71	malu257	-10,80%	-11,96%	-2,04%	-20,32%	-12,90%	-10,63%
72	mama444	-14,91%	-18,26%	-4,27%	-20,55%	-15,35%	-7,42%
73	mela164	-8,67%	-11,17%	-19,02%	-16,58%	-14,89%	-23,91%
74	migi167	-3,36%	-4,15%	-9,44%	-9,81%	-6,55%	-10,13%
75	miro432	-5,29%	-3,16%	-25,35%	-12,74%	0,08%	-21,36%
76	mobe354	-5,24%	-6,92%	-23,64%	-15,91%	-13,21%	-27,27%
77	more267	-3,74%	-16,40%	-5,98%	-14,95%	-22,75%	-19,59%
78	nagr443	-4,96%	-9,62%	-2,00%	-10,92%	-1,09%	-2,58%
79	nama501	-3,50%	-13,83%	-0,06%	-16,50%	-17,06%	-0,91%
80	paba487	-2,09%	-8,48%	-3,06%	-2,78%	-8,07%	-19,23%
81	pamu418	-20,54%	-6,06%	-5,93%	-1,41%	-8,66%	-12,77%
82	pavi307	-6,20%	-9,94%	-0,70%	-6,75%	-14,83%	-10,80%
83	pivi463	-8,98%	-6,12%	-22,73%	-19,76%	-8,16%	-12,99%
84	rast348	-6,19%	-11,13%	-23,71%	-9,28%	-3,51%	-13,61%
85	ricl480	-10,38%	-36,53%	-7,22%	-0,54%	-41,33%	-10,57%
86	riia62	-11,61%	-5,12%	-24,26%	-18,06%	0,24%	-4,92%
87	roca128	-9,84%	-9,84%	-8,47%	-16,94%	-14,53%	-13,33%
88	roia359	-11,02%	-5,92%	-10,60%	-16,54%	-7,24%	-11,92%
89	romi370	-1,86%	-21,88%	-3,16%	-4,52%	-31,37%	-5,84%
90	rote181	-1,61%	-2,40%	-6,57%	-3,93%	-5,05%	-0,44%
91	rova262	-4,62%	-6,25%	-1,45%	-5,91%	-10,04%	-3,73%
92	saca272	-9,15%	-4,02%	-14,20%	-19,51%	-19,96%	-18,71%
93	saca38	-4,51%	-3,02%	-8,40%	-12,41%	-17,25%	-18,38%
94	sagi270	-5,88%	-7,00%	-16,86%	-13,37%	-15,29%	-26,70%
95	sapo213	-8,10%	-1,87%	-1,33%	-11,95%	-5,78%	-3,10%
96	sigi469	-1,75%	-21,32%	-16,08%	-9,75%	-27,96%	-23,13%
97	tecri3	-1,54%	-5,19%	-7,81%	-12,26%	-14,06%	-26,24%
98	tiba281	-3,89%	-4,18%	-14,10%	-8,79%	-12,65%	-19,94%
99	tira309	-3,70%	-3,27%	-0,80%	-10,45%	-4,60%	-8,15%
100	vidi524	-3,92%	-26,28%	-14,86%	-7,18%	-25,07%	-2,01%
MEAN		**-7,67%**	**-6,73%**	**-10,53%**	**-14,04%**	**-9,93%**	**-11,25%**

ANNEX 2: **Raw data of R0 (firmness)**

Right forearm: TREATED
Left forearm: UNTREATED

N° Vol.	Vol. Code	T0		T15		T30	
		UNTREATED	TREATED	UNTREATED	TREATED	UNTREATED	TREATED
1	adci526	0,210	0,212	0,206	0,180	0,217	0,166
2	ancon12	0,252	0,266	0,254	0,209	0,251	0,195
3	aniz367	0,152	0,180	0,143	0,107	0,148	0,102
4	anla484	0,267	0,263	0,275	0,253	0,275	0,248
5	anla7	0,258	0,256	0,266	0,248	0,267	0,241
6	anpan13	0,227	0,219	0,221	0,187	0,228	0,133
7	anpe409	0,284	0,262	0,270	0,212	0,283	0,202
8	anpe440	0,288	0,400	0,302	0,263	0,302	0,258
9	ansa120	0,240	0,237	0,238	0,187	0,244	0,175
10	arsu460	0,306	0,262	0,297	0,254	0,301	0,239
11	bami523	0,341	0,263	0,320	0,255	0,330	0,244
12	brti103	0,308	0,306	0,310	0,285	0,303	0,245
13	cabo441	0,321	0,312	0,279	0,307	0,320	0,303
14	caca55	0,212	0,194	0,216	0,178	0,215	0,135
15	cama505	0,264	0,263	0,256	0,254	0,269	0,199
16	caro420	0,286	0,227	0,276	0,207	0,282	0,218
17	chce155	0,249	0,275	0,254	0,249	0,260	0,209
18	clbe483	0,233	0,236	0,244	0,230	0,246	0,182
19	criquat14	0,250	0,235	0,240	0,219	0,237	0,214
20	crta129	0,201	0,213	0,211	0,179	0,207	0,157
21	dabe206	0,220	0,232	0,235	0,197	0,226	0,228
22	dalo334	0,147	0,176	0,150	0,141	0,152	0,124
23	debo349	0,215	0,255	0,213	0,232	0,224	0,202
24	dima287	0,202	0,213	0,212	0,211	0,208	0,168
25	dipi365	0,246	0,281	0,254	0,279	0,244	0,245
26	doca447	0,211	0,275	0,210	0,233	0,217	0,247
27	dogi445	0,280	0,281	0,281	0,258	0,284	0,210
28	elca122	0,298	0,343	0,297	0,244	0,299	0,232
29	eliv342	0,227	0,209	0,220	0,195	0,225	0,196
30	eman525	0,211	0,197	0,214	0,184	0,210	0,172
31	esa8	0,282	0,288	0,276	0,216	0,287	0,212

N° Vol.	Vol. Code	T0		T15		T30	
		UNTREATED	TREATED	UNTREATED	TREATED	UNTREATED	TREATED
32	fead421	0,259	0,225	0,291	0,221	0,295	0,209
33	fibl275	0,387	0,390	0,395	0,370	0,397	0,333
34	fipa355	0,365	0,263	0,371	0,253	0,361	0,210
35	frga90	0,326	0,330	0,329	0,251	0,333	0,194
36	frma177	0,278	0,277	0,283	0,256	0,288	0,239
37	gaam497	0,302	0,304	0,303	0,262	0,301	0,239
38	gabr259	0,265	0,242	0,263	0,218	0,276	0,117
39	gati441	0,291	0,321	0,264	0,258	0,294	0,244
40	gica434	0,270	0,227	0,279	0,221	0,283	0,169
41	giga455	0,268	0,297	0,271	0,278	0,260	0,189
42	gigr222	0,309	0,338	0,319	0,325	0,315	0,308
43	gima500	0,183	0,173	0,187	0,160	0,185	0,163
44	gipi527	0,259	0,252	0,266	0,234	0,268	0,150
45	giufi20	0,284	0,201	0,285	0,189	0,285	0,177
46	kadi493	0,293	0,225	0,296	0,180	0,280	0,167
47	lalom4	0,272	0,312	0,271	0,251	0,268	0,256
48	lata251	0,239	0,245	0,233	0,182	0,238	0,158
49	lili254	0,279	0,256	0,280	0,248	0,278	0,234
50	liva137	0,357	0,318	0,359	0,301	0,360	0,284
51	lode61	0,356	0,346	0,349	0,326	0,338	0,302
52	loma2	0,216	0,189	0,209	0,180	0,210	0,168
53	lopo479	0,297	0,279	0,299	0,267	0,298	0,259
54	lotu144	0,270	0,290	0,302	0,213	0,275	0,278
55	lual476	0,217	0,167	0,218	0,154	0,228	0,145
56	lubel22	0,217	0,240	0,185	0,230	0,197	0,216
57	lude228	0,296	0,260	0,296	0,239	0,287	0,224
58	ludi5	0,384	0,365	0,382	0,359	0,370	0,348
59	lufiu18	0,279	0,271	0,276	0,245	0,271	0,207
60	luge86	0,233	0,212	0,230	0,203	0,231	0,198
61	lupr276	0,376	0,345	0,368	0,341	0,367	0,330
62	luri265	0,290	0,289	0,288	0,280	0,291	0,272
63	lute520	0,187	0,225	0,185	0,209	0,187	0,191
64	lutuc9	0,272	0,273	0,275	0,247	0,275	0,218
65	maal258	0,167	0,166	0,169	0,146	0,164	0,151
66	maap492	0,227	0,289	0,240	0,234	0,247	0,217
67	maca268	0,179	0,177	0,176	0,042	0,178	0,024

N° Vol.	Vol. Code	T0		T15		T30	
		UNTREATED	TREATED	UNTREATED	UNTREATED	TREATED	UNTREATED
68	maca64	0,281	0,233	0,293	0,212	0,273	0,198
69	macat1	0,301	0,255	0,295	0,210	0,298	0,197
70	made135	0,143	0,128	0,144	0,104	0,154	0,097
71	malu257	0,208	0,223	0,207	0,153	0,205	0,123
72	mama444	0,173	0,208	0,176	0,202	0,169	0,164
73	mela164	0,226	0,248	0,237	0,241	0,232	0,177
74	migi167	0,223	0,210	0,217	0,130	0,231	0,121
75	miro432	0,223	0,273	0,224	0,274	0,224	0,251
76	mobe354	0,208	0,234	0,209	0,143	0,204	0,138
77	more267	0,235	0,300	0,238	0,220	0,239	0,195
78	nagr443	0,256	0,256	0,263	0,248	0,260	0,223
79	nama501	0,267	0,255	0,270	0,258	0,275	0,230
80	paba487	0,262	0,276	0,270	0,265	0,262	0,239
81	pamu418	0,210	0,241	0,236	0,227	0,213	0,215
82	pavi307	0,216	0,280	0,228	0,252	0,217	0,230
83	pivi463	0,251	0,287	0,254	0,164	0,257	0,142
84	rast348	0,246	0,237	0,244	0,227	0,251	0,224
85	ricl480	0,276	0,235	0,270	0,215	0,278	0,221
86	riia62	0,338	0,274	0,348	0,269	0,347	0,267
87	roca128	0,199	0,225	0,201	0,207	0,199	0,198
88	roia359	0,230	0,206	0,236	0,153	0,234	0,128
89	romi370	0,342	0,346	0,309	0,279	0,315	0,268
90	rote181	0,268	0,236	0,271	0,215	0,275	0,191
91	rova262	0,226	0,222	0,226	0,205	0,227	0,198
92	saca272	0,309	0,257	0,295	0,197	0,306	0,181
93	saca38	0,223	0,244	0,220	0,212	0,219	0,188
94	sagi270	0,245	0,237	0,241	0,201	0,238	0,191
95	sapo213	0,239	0,188	0,232	0,155	0,265	0,145
96	sigi469	0,204	0,235	0,210	0,198	0,203	0,175
97	tecri3	0,251	0,249	0,247	0,210	0,252	0,197
98	tiba281	0,209	0,215	0,210	0,195	0,213	0,178
99	tira309	0,230	0,193	0,236	0,180	0,232	0,149
100	vidi524	0,281	0,314	0,258	0,249	0,273	0,195
MEAN		**0,256**	**0,254**	**0,256**	**0,223**	**0,258**	**0,203**

R0 % variations

N° Vol.	Vol. Code	% variations T15 vs T0		% variations T30 vs T0	
		UNTREATED	TREATED	UNTREATED	TREATED
1	adci526	-1,90%	-15,09%	3,33%	-21,70%
2	ancon12	0,79%	-21,43%	-0,40%	-26,69%
3	aniz367	-5,92%	-40,56%	-2,63%	-43,33%
4	anla484	3,00%	-3,59%	3,00%	-5,64%
5	anla7	3,10%	-3,13%	3,60%	-5,86%
6	anpan13	-2,64%	-14,61%	0,44%	-39,27%
7	anpe409	-4,93%	-19,08%	-0,35%	-22,90%
8	anpe440	4,86%	-34,25%	4,79%	-35,50%
9	ansa120	-0,83%	-21,10%	1,67%	-26,16%
10	arsu460	-2,94%	-3,05%	-1,63%	-8,78%
11	bami523	-6,16%	-3,04%	-3,23%	-7,22%
12	brti103	0,65%	-6,86%	-1,62%	-19,93%
13	cabo441	-13,08%	-1,60%	-0,31%	-2,88%
14	caca55	1,89%	-8,25%	1,23%	-30,41%
15	cama505	-3,03%	-3,42%	1,89%	-24,33%
16	caro420	-3,50%	-8,81%	-1,40%	-3,96%
17	chce155	2,01%	-9,45%	4,42%	-24,00%
18	clbe483	4,72%	-2,54%	5,58%	-22,88%
19	criquat14	-4,00%	-6,81%	-5,20%	-8,94%
20	crta129	4,98%	-15,96%	2,99%	-26,29%
21	dabe206	6,82%	-15,09%	2,77%	-1,72%
22	dalo334	2,04%	-19,89%	3,40%	-29,55%
23	debo349	-0,74%	-9,02%	4,19%	-20,78%
24	dima287	4,97%	-0,94%	2,99%	-21,13%
25	dipi365	3,25%	-0,71%	-0,81%	-12,81%
26	doca447	-0,47%	-15,27%	2,84%	-10,18%
27	dogi445	0,36%	-8,19%	1,43%	-25,27%
28	elca122	-0,34%	-28,86%	0,34%	-32,36%
29	eliv342	-2,96%	-6,70%	-0,57%	-6,22%
30	eman525	1,42%	-6,60%	-0,47%	-12,69%
31	esa8	-2,13%	-25,00%	1,77%	-26,39%
32	fead421	12,36%	-1,78%	13,90%	-7,11%
33	fibl275	2,07%	-5,13%	2,58%	-14,62%
34	fipa355	1,64%	-3,80%	-1,10%	-20,15%

N° Vol.	Vol. Code	% variations T15 vs T0		% variations T30 vs T0	
		UNTREATED	TREATED	UNTREATED	TREATED
35	frga90	0,92%	-23,94%	2,15%	-41,21%
36	frma177	1,80%	-7,58%	3,60%	-13,72%
37	gaam497	0,33%	-13,82%	-0,33%	-21,38%
38	gabr259	-0,75%	-9,92%	4,15%	-51,65%
39	gati441	-9,28%	-19,63%	1,03%	-23,99%
40	gica434	3,33%	-2,64%	4,81%	-25,55%
41	giga455	1,12%	-6,40%	-2,99%	-36,36%
42	gigr222	3,24%	-3,85%	1,94%	-8,88%
43	gima500	2,19%	-7,51%	1,09%	-5,78%
44	gipi527	2,70%	-7,14%	3,47%	-40,48%
45	giufi20	0,35%	-5,97%	0,35%	-11,94%
46	kadi493	1,02%	-20,00%	-4,44%	-25,78%
47	lalom4	-0,37%	-19,55%	-1,47%	-17,95%
48	lata251	-2,51%	-25,71%	-0,42%	-35,51%
49	lili254	0,36%	-3,13%	-0,36%	-8,59%
50	liva137	0,56%	-5,35%	0,84%	-10,69%
51	lode61	-1,97%	-5,78%	-5,06%	-12,72%
52	loma2	-3,24%	-4,76%	-2,78%	-11,11%
53	lopo479	0,67%	-4,30%	0,34%	-7,17%
54	lotu144	11,85%	-26,55%	1,81%	-4,14%
55	lual476	0,46%	-7,78%	5,07%	-13,17%
56	lubel22	-14,75%	-4,17%	-9,22%	-9,96%
57	lude228	0,00%	-8,08%	-2,91%	-13,85%
58	ludi5	-0,52%	-1,64%	-3,65%	-4,66%
59	lufiu18	-0,96%	-9,59%	-2,72%	-23,62%
60	luge86	-1,29%	-4,25%	-0,86%	-6,60%
61	lupr276	-2,13%	-1,16%	-2,39%	-4,35%
62	luri265	-0,69%	-3,11%	0,34%	-5,88%
63	lute520	-1,07%	-7,11%	0,00%	-15,11%
64	lutuc9	0,91%	-9,28%	1,04%	-20,04%
65	maal258	1,20%	-12,05%	-1,80%	-9,04%
66	maap492	5,73%	-19,03%	8,81%	-24,91%
67	maca268	-1,68%	-76,27%	-0,56%	-86,44%
68	maca64	4,27%	-9,01%	-2,85%	-15,02%
69	macat1	-1,99%	-17,65%	-1,00%	-22,75%
70	made135	0,70%	-18,75%	7,69%	-24,22%

N° Vol.	Vol. Code	% variations T15 vs T0		% variations T30 vs T0	
		UNTREATED	TREATED	UNTREATED	TREATED
71	malu257	-0,48%	-31,39%	-1,44%	-44,84%
72	mama444	1,73%	-2,88%	-2,31%	-21,15%
73	mela164	4,87%	-2,82%	2,65%	-28,63%
74	migi167	-2,69%	-38,10%	3,59%	-42,38%
75	miro432	0,45%	0,37%	0,45%	-8,06%
76	mobe354	0,48%	-38,89%	-1,92%	-41,03%
77	more267	1,28%	-26,67%	1,70%	-35,00%
78	nagr443	2,73%	-3,13%	1,56%	-12,89%
79	nama501	1,12%	1,18%	3,00%	-9,80%
80	paba487	3,05%	-3,99%	0,15%	-13,41%
81	pamu418	12,38%	-5,81%	1,46%	-10,62%
82	pavi307	5,56%	-10,00%	0,46%	-17,86%
83	pivi463	1,20%	-42,86%	2,39%	-50,52%
84	rast348	-0,81%	-4,22%	2,03%	-5,49%
85	ricl480	-2,17%	-8,51%	0,72%	-5,96%
86	riia62	2,96%	-1,82%	2,66%	-2,55%
87	roca128	1,01%	-8,00%	0,00%	-12,00%
88	roia359	2,61%	-25,73%	1,74%	-37,86%
89	romi370	-9,53%	-19,36%	-7,92%	-22,54%
90	rote181	1,12%	-8,90%	2,61%	-19,07%
91	rova262	0,00%	-7,66%	0,44%	-10,81%
92	saca272	-4,53%	-23,35%	-0,97%	-29,57%
93	saca38	-1,35%	-13,11%	-1,79%	-22,95%
94	sagi270	-1,63%	-15,19%	-2,86%	-19,41%
95	sapo213	-2,93%	-17,55%	10,88%	-22,87%
96	sigi469	2,94%	-15,74%	-0,49%	-25,53%
97	tecri3	-1,59%	-15,66%	0,40%	-20,88%
98	tiba281	0,48%	-9,30%	1,91%	-17,21%
99	tira309	2,74%	-6,74%	1,00%	-22,80%
100	vidi524	-8,19%	-20,70%	-2,85%	-37,90%
MEAN		**0,19%**	**-12,49%**	**0,71%**	**-20,33%**

Raw data of R2 (elasticity)

Right forearm: TREATED
Left forearm: UNTREATED

N° Vol.	Vol. Code	T0		T15		T30	
		UNTREATED	TREATED	UNTREATED	TREATED	UNTREATED	TREATED
1	adci526	0,828	0,819	0,801	0,861	0,806	0,893
2	ancon12	0,845	0,857	0,823	0,875	0,838	0,907
3	aniz367	0,987	0,928	0,945	0,983	0,948	0,991
4	anla484	0,940	0,969	0,916	0,979	0,898	0,998
5	anla7	0,655	0,714	0,591	0,723	0,603	0,877
6	anpan13	0,894	0,845	0,895	0,861	0,863	0,905
7	anpe409	0,832	0,833	0,830	0,873	0,828	0,905
8	anpe440	0,768	0,789	0,745	0,796	0,797	0,819
9	ansa120	0,913	0,937	0,903	0,979	0,901	0,987
10	arsu460	0,819	0,891	0,820	0,912	0,817	0,935
11	bami523	0,685	0,676	0,684	0,688	0,678	0,732
12	brti103	0,885	0,895	0,924	0,937	0,916	0,975
13	cabo441	0,821	0,834	0,828	0,843	0,825	0,868
14	caca55	0,783	0,851	0,781	0,884	0,784	0,901
15	cama505	0,963	0,982	0,986	0,992	0,954	0,996
16	caro420	0,881	0,916	0,883	0,957	0,863	0,979
17	chce155	0,960	0,971	0,965	0,976	0,933	0,993
18	clbe483	0,892	0,915	0,889	0,923	0,893	0,975
19	criquat14	0,883	0,828	0,882	0,844	0,879	0,865
20	crta129	0,950	0,906	0,944	0,972	0,946	0,988
21	dabe206	0,941	0,858	0,947	0,863	0,949	0,908
22	dalo334	0,925	0,886	0,923	0,973	0,944	0,986
23	debo349	0,815	0,855	0,818	0,894	0,820	0,929
24	dima287	0,944	0,934	0,920	0,962	0,948	0,971
25	dipi365	0,963	0,886	0,976	0,984	0,930	0,976
26	doca447	0,815	0,822	0,767	0,849	0,797	0,870
27	dogi445	0,907	0,947	0,904	0,965	0,919	0,986
28	elca122	0,977	0,945	0,962	0,967	0,945	0,975
29	eliv342	0,754	0,828	0,768	0,892	0,758	0,901
30	eman525	0,878	0,873	0,884	0,894	0,869	0,916
31	esa8	0,818	0,764	0,837	0,861	0,798	0,863

N° Vol.	Vol. Code	T0		T15		T30	
		UNTREATED	TREATED	UNTREATED	TREATED	UNTREATED	TREATED
32	fead421	0,857	0,902	0,849	0,968	0,841	0,975
33	fibl275	1,000	0,873	0,991	0,951	0,988	0,986
34	fipa355	0,910	0,897	0,887	0,945	0,936	0,978
35	frga90	0,972	0,969	0,963	0,986	0,921	0,998
36	frma177	0,713	0,780	0,714	0,785	0,729	0,881
37	gaam497	0,821	0,790	0,842	0,898	0,838	0,972
38	gabr259	0,962	0,942	0,959	0,968	0,977	0,982
39	gati441	0,916	0,854	0,880	0,863	0,884	0,887
40	gica434	0,930	0,892	0,944	0,960	0,903	0,973
41	giga455	0,906	0,909	0,908	0,917	0,906	0,967
42	gigr222	0,835	0,840	0,831	0,907	0,844	0,932
43	gima500	0,951	0,970	0,968	0,981	0,903	0,990
44	gipi527	0,967	0,944	0,970	0,974	0,977	0,983
45	giufi20	0,851	0,870	0,877	0,928	0,818	0,960
46	kadi493	0,877	0,938	0,893	0,951	0,887	0,992
47	lalom4	0,740	0,747	0,773	0,789	0,707	0,825
48	lata251	0,929	0,959	0,834	0,978	0,898	0,998
49	lili254	0,823	0,856	0,816	0,905	0,821	0,986
50	liva137	0,904	0,912	0,910	0,948	0,935	0,987
51	lode61	0,925	0,958	0,928	0,979	0,934	0,990
52	loma2	0,937	0,976	0,930	0,989	0,942	1,000
53	lopo479	0,889	0,902	0,880	0,976	0,887	0,994
54	lotu144	0,700	0,841	0,755	0,845	0,725	0,860
55	lual476	0,834	0,862	0,825	0,948	0,821	0,958
56	lubel22	0,838	0,817	0,800	0,822	0,873	0,874
57	lude228	0,884	0,892	0,871	0,895	0,888	0,921
58	ludi5	0,860	0,874	0,869	0,925	0,886	0,991
59	lufiu18	0,745	0,719	0,755	0,735	0,769	0,806
60	luge86	0,801	0,824	0,809	0,949	0,827	0,989
61	lupr276	0,906	0,931	0,910	0,959	0,924	0,986
62	luri265	0,800	0,810	0,814	0,916	0,831	0,993
63	lute520	0,849	0,796	0,849	0,825	0,851	0,879
64	lutuc9	0,909	0,912	0,902	0,955	0,900	0,980
65	maal258	0,863	0,861	0,849	0,879	0,858	0,881
66	maap492	0,903	0,862	0,908	0,927	0,902	0,954
67	maca268	0,827	0,804	0,824	0,914	0,817	0,924

N° Vol.	Vol. Code	T0		T15		T30	
		UNTREATED	TREATED	UNTREATED	UNTREATED	TREATED	UNTREATED
68	maca64	0,872	0,893	0,867	0,908	0,871	0,941
69	macat1	0,821	0,722	0,824	0,767	0,821	0,789
70	made135	0,860	0,804	0,883	0,835	0,889	0,853
71	malu257	0,688	0,731	0,684	0,791	0,688	0,814
72	mama444	0,884	0,837	0,878	0,875	0,879	0,889
73	mela164	0,810	0,812	0,814	0,854	0,816	0,893
74	migi167	0,861	0,857	0,867	0,915	0,864	0,947
75	miro432	0,749	0,839	0,774	0,862	0,759	0,875
76	mobe354	0,851	0,845	0,858	0,915	0,862	0,924
77	more267	0,816	0,813	0,815	0,857	0,811	0,868
78	nagr443	0,804	0,783	0,802	0,794	0,809	0,874
79	nama501	0,760	0,780	0,731	0,857	0,752	0,874
80	paba487	0,853	0,850	0,852	0,883	0,884	0,899
81	pamu418	0,840	0,788	0,792	0,807	0,831	0,887
82	pavi307	0,843	0,879	0,829	0,893	0,829	0,913
83	pivi463	0,829	0,683	0,822	0,796	0,825	0,815
84	rast348	0,744	0,899	0,747	0,924	0,734	0,954
85	ricl480	0,727	0,733	0,726	0,767	0,723	0,786
86	riia62	0,917	0,887	0,911	0,958	0,915	0,984
87	roca128	0,854	0,857	0,856	0,897	0,851	0,908
88	roia359	0,585	0,621	0,589	0,704	0,587	0,729
89	romi370	0,739	0,769	0,734	0,781	0,747	0,799
90	rote181	0,862	0,876	0,871	0,891	0,881	0,943
91	rova262	0,790	0,842	0,761	0,878	0,763	0,892
92	saca272	0,850	0,860	0,854	0,897	0,840	0,904
93	saca38	0,982	0,893	0,980	0,924	0,954	0,931
94	sagi270	0,829	0,849	0,830	0,908	0,834	0,916
95	sapo213	0,812	0,819	0,789	0,834	0,798	0,893
96	sigi469	0,799	0,785	0,801	0,816	0,800	0,838
97	tecri3	0,839	0,845	0,840	0,879	0,838	0,894
98	tiba281	0,808	0,812	0,810	0,859	0,809	0,897
99	tira309	0,751	0,746	0,759	0,922	0,767	0,975
100	vidi524	0,872	0,834	0,868	0,842	0,873	0,877
MEAN		**0,852**	**0,853**	**0,848**	**0,893**	**0,849**	**0,922**

R0 % variations

N° Vol.	Vol. Code	% variations T15 vs T0		% variations T30 vs T0	
		UNTREATED	TREATED	UNTREATED	TREATED
1	adci526	-3,26%	5,13%	-2,66%	9,04%
2	ancon12	-2,60%	2,10%	-0,83%	5,83%
3	aniz367	-4,26%	5,93%	-3,95%	6,79%
4	anla484	-2,55%	1,03%	-4,47%	2,99%
5	anla7	-9,77%	1,26%	-7,94%	22,83%
6	anpan13	0,11%	1,89%	-3,47%	7,10%
7	anpe409	-0,24%	4,80%	-0,53%	8,64%
8	anpe440	-2,99%	0,89%	3,78%	3,74%
9	ansa120	-1,10%	4,48%	-1,31%	5,34%
10	arsu460	0,12%	2,36%	-0,24%	4,94%
11	bami523	-0,15%	1,75%	-1,02%	8,28%
12	brti103	4,41%	4,69%	3,50%	8,94%
13	cabo441	0,85%	1,08%	0,45%	4,08%
14	caca55	-0,29%	3,88%	0,15%	5,89%
15	cama505	2,39%	1,02%	-0,93%	1,43%
16	caro420	0,23%	4,48%	-2,04%	6,92%
17	chce155	0,52%	0,51%	-2,81%	2,27%
18	clbe483	-0,34%	0,87%	0,09%	6,56%
19	criquat14	-0,07%	1,94%	-0,46%	4,48%
20	crta129	-0,63%	7,28%	-0,42%	9,05%
21	dabe206	0,62%	0,58%	0,83%	5,83%
22	dalo334	-0,22%	9,82%	2,05%	11,29%
23	debo349	0,37%	4,56%	0,58%	8,65%
24	dima287	-2,54%	3,00%	0,42%	3,96%
25	dipi365	1,35%	11,06%	-3,43%	10,16%
26	doca447	-5,89%	3,28%	-2,21%	5,84%
27	dogi445	-0,33%	1,90%	1,32%	4,12%
28	elca122	-1,54%	2,33%	-3,28%	3,17%
29	eliv342	1,86%	7,73%	0,55%	8,82%
30	eman525	0,68%	2,41%	-1,03%	4,93%
31	esa8	2,32%	12,70%	-2,44%	12,96%
32	fead421	-0,93%	7,32%	-1,87%	8,09%
33	fibl275	-0,90%	8,93%	-1,20%	12,94%
34	fipa355	-2,53%	5,35%	2,86%	9,03%

N° Vol.	Vol. Code	% variations T15 vs T0		% variations T30 vs T0	
		UNTREATED	TREATED	UNTREATED	TREATED
35	frga90	-0,93%	1,75%	-5,25%	2,99%
36	frma177	0,10%	0,67%	2,20%	12,98%
37	gaam497	2,56%	13,67%	2,07%	23,04%
38	gabr259	-0,31%	2,76%	1,56%	4,25%
39	gati441	-3,93%	1,05%	-3,54%	3,91%
40	gica434	1,51%	7,62%	-2,90%	9,08%
41	giga455	0,22%	0,88%	0,01%	6,38%
42	gigr222	-0,48%	7,98%	1,08%	10,95%
43	gima500	1,79%	1,13%	-5,05%	2,06%
44	gipi527	0,31%	3,18%	1,03%	4,13%
45	giufi20	3,06%	6,67%	-3,88%	10,34%
46	kadi493	1,82%	1,39%	1,14%	5,76%
47	lalom4	4,46%	5,62%	-4,46%	10,44%
48	lata251	-10,23%	1,98%	-3,34%	4,07%
49	lili254	-0,85%	5,72%	-0,24%	15,19%
50	liva137	0,66%	3,95%	3,43%	8,22%
51	lode61	0,32%	2,19%	0,97%	3,34%
52	loma2	-0,75%	1,33%	0,53%	2,46%
53	lopo479	-1,01%	8,20%	-0,22%	10,20%
54	lotu144	7,86%	0,48%	3,57%	2,28%
55	lual476	-1,08%	9,98%	-1,56%	11,14%
56	lubel22	-4,53%	0,61%	4,18%	6,98%
57	lude228	-1,47%	0,34%	0,45%	3,25%
58	ludi5	1,05%	5,84%	3,02%	13,39%
59	lufiu18	1,34%	2,23%	3,22%	12,10%
60	luge86	1,00%	15,17%	3,25%	20,02%
61	lupr276	0,44%	3,01%	1,99%	5,91%
62	luri265	1,75%	13,09%	3,87%	22,59%
63	lute520	0,00%	3,64%	0,24%	10,43%
64	lutuc9	-0,79%	4,67%	-1,03%	7,42%
65	maal258	-1,62%	2,09%	-0,61%	2,32%
66	maap492	0,57%	7,54%	-0,09%	10,67%
67	maca268	-0,36%	13,68%	-1,21%	14,93%
68	maca64	-0,57%	1,68%	-0,11%	5,38%
69	macat1	0,41%	6,23%	0,05%	9,28%
70	made135	2,67%	3,86%	3,39%	6,14%

N° Vol.	Vol. Code	% variations T15 vs T0		% variations T30 vs T0	
		UNTREATED	TREATED	UNTREATED	TREATED
71	malu257	-0,58%	8,21%	0,00%	11,35%
72	mama444	-0,68%	4,54%	-0,57%	6,21%
73	mela164	0,49%	5,11%	0,77%	9,96%
74	migi167	0,70%	6,77%	0,35%	10,50%
75	miro432	3,34%	2,74%	1,34%	4,29%
76	mobe354	0,82%	8,28%	1,29%	9,35%
77	more267	-0,12%	5,41%	-0,61%	6,77%
78	nagr443	-0,21%	1,46%	0,56%	11,68%
79	nama501	-3,82%	9,87%	-1,05%	12,05%
80	paba487	-0,12%	3,88%	3,63%	5,76%
81	pamu418	-5,71%	2,41%	-1,07%	12,56%
82	pavi307	-1,66%	1,59%	-1,66%	3,87%
83	pivi463	-0,84%	16,54%	-0,45%	19,33%
84	rast348	0,40%	2,78%	-1,34%	6,12%
85	ricl480	-0,14%	4,70%	-0,55%	7,35%
86	riia62	-0,65%	8,00%	-0,22%	10,94%
87	roca128	0,23%	4,67%	-0,35%	5,95%
88	roia359	0,68%	13,37%	0,34%	17,39%
89	romi370	-0,61%	1,56%	1,15%	3,90%
90	rote181	1,04%	1,71%	2,20%	7,65%
91	rova262	-3,67%	4,28%	-3,42%	5,94%
92	saca272	0,47%	4,30%	-1,18%	5,12%
93	saca38	-0,20%	3,43%	-2,85%	4,21%
94	sagi270	0,12%	6,95%	0,60%	7,89%
95	sapo213	-2,83%	1,83%	-1,72%	9,04%
96	sigi469	0,25%	3,95%	0,13%	6,75%
97	tecri3	0,12%	4,02%	-0,12%	5,80%
98	tiba281	0,25%	5,79%	0,12%	10,47%
99	tira309	1,07%	23,59%	2,13%	30,70%
100	vidi524	-0,46%	1,00%	0,11%	5,16%
MEAN		**-0,35%**	**4,83%**	**-0,27%**	**8,33%**

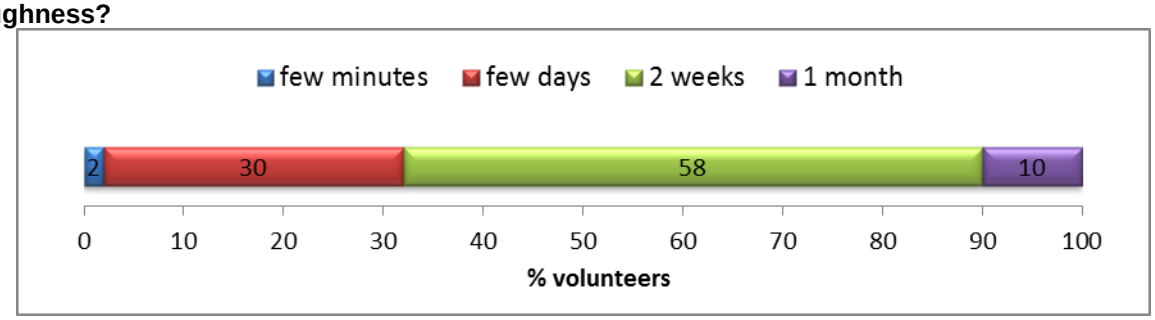
ANNEX 3

Questionnaire concerning a sensorial / psichorheological assessment relative to the tested product

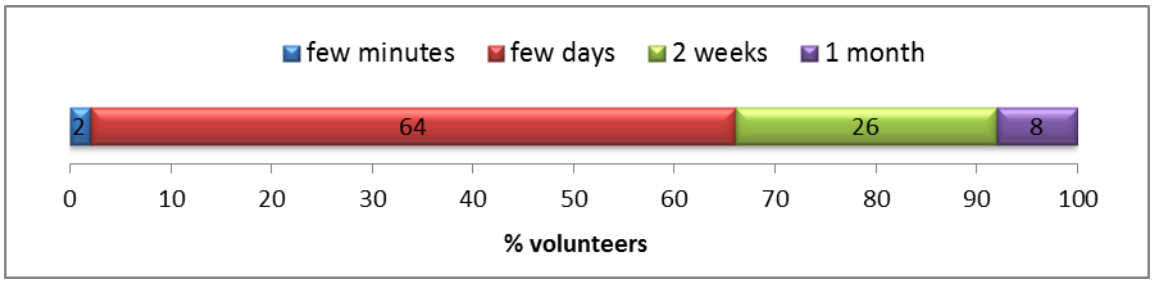
To obtain a judgment from potential customers on product performances and on its cosmetic pleasentness, the 100 subjects who took part to the study answered to a questionnaire on a subjective evaluation of the tested product.
Here below are reported all questions of the questionnaire and their answers are represented in the form of graphs.
The mean values on the VAS scale or the percentage of volunteers who expressed the same opinion were calculated for each answer.

➢ **In your opinion in what manner the tested product has improved the following skin parameters?**

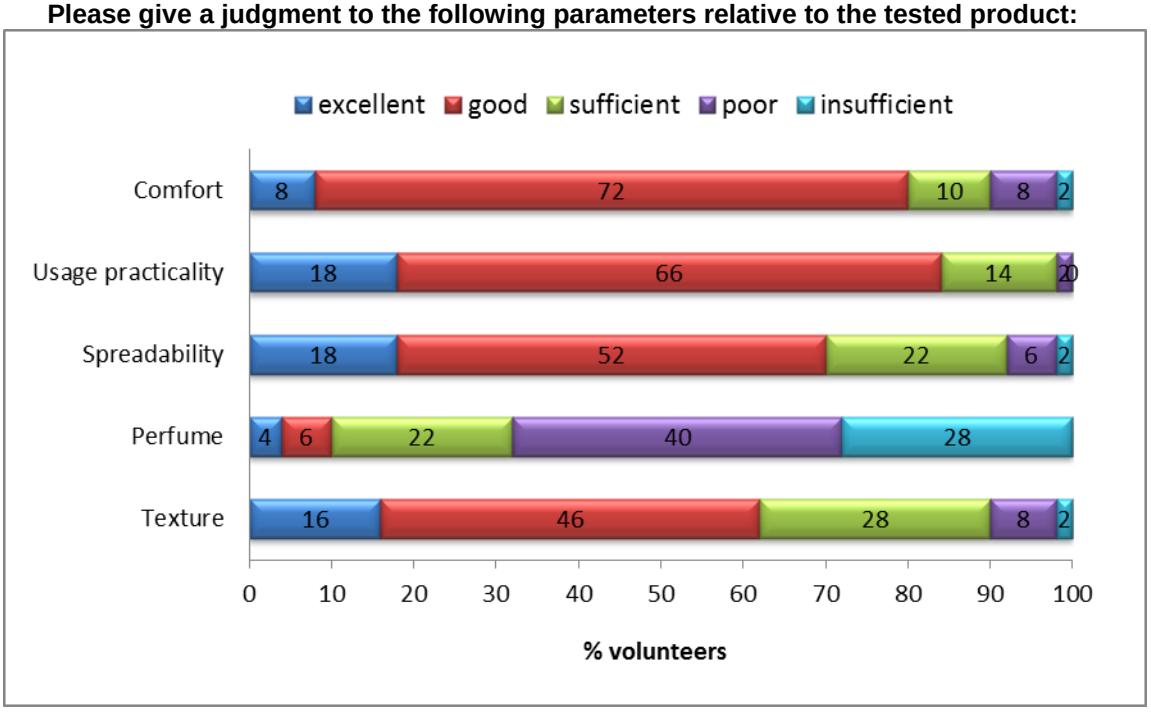
➢ **How long after the first application have you noticed an improvement in the skin roughness?**



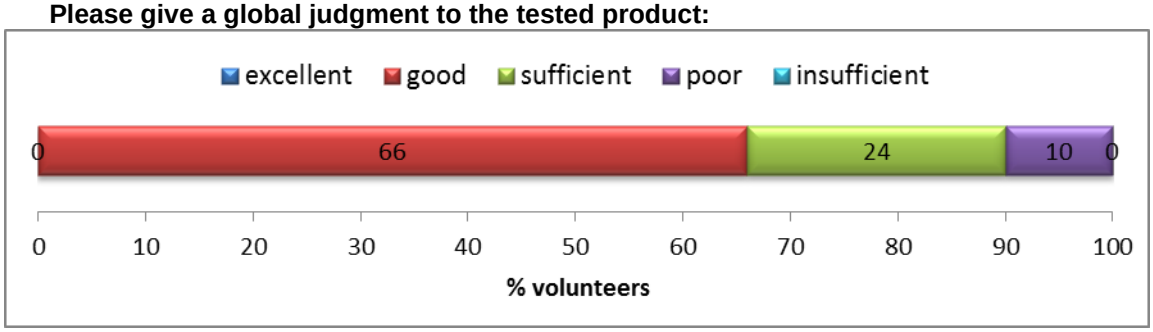
➢ **How long after the first application have you noticed an improvement in the skin hydration?**



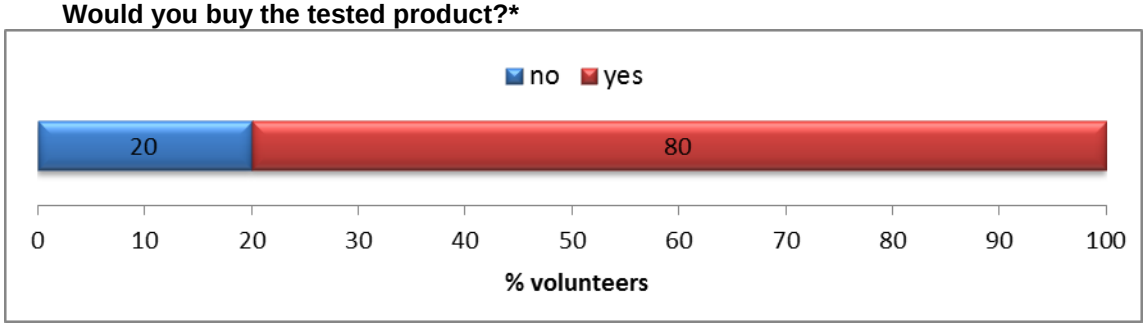
➢ **Please give a judgment to the following parameters relative to the tested product:**



➢ **Please give a global judgment to the tested product:**

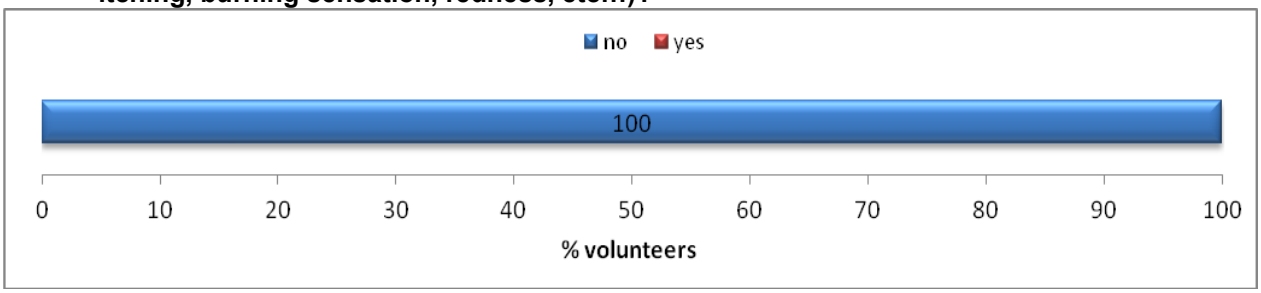


➢ **Would you buy the tested product?***



*The subjects who answered "NO" to this question was asked to indicate the motivation.
The answers were:
- The product has an unpleasant odour.
- The product is too fluid.
- I didn't noticed any improvement in skin roughness
- The product is too little hydrating for my kind of skin

➢ **After the product usage did you note adverse effect caused by the product itself (irritation, itching, burning sensation, redness, etc…)?**



ANNEX 4

Inci list TAM- 818 Serum

Aqua, Jojoba Esters, Macadamia Integrifolia (Seed) Oil, Ethyl Macadamiate, Isoamyl Laurate, Lecithin, Polyglyceryl-10 Stearate, Helianthus Annuus (Sunflower seed) Oil, phospholipids, Sodium Acrylates Copolymer, Glyceryl Caprylate, Isopropyl myristate, Glycerin, Hydrogenated Polyisobutene, Polyglceryl-6 Caprylate, Caprylhydroxamic acid, Propanediol, phytosphingosine, Sodium Phytate, TAM-818.