

STUDY REPORT

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July 30th, 2008

EVALUATION OF THE IMMEDIATE AND LONG-TERM ANTI-WRINKLE EFFECT OF BOOSTER HWNB (AW01/1212), APPLIED IN NORMAL CONDITIONS OF USE, DURING 28 DAYS, BY 15 ADULT VOLUNTEERS: Efficacy test

Promoter: LEOREX

EUROFINS ATS reference: 018TU30V4S08

EUROFINS ATS Investigators:

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Dermatologist: Marie CREST; MD

Tested products:

- Denomination: BOOSTER HWNB
- Client reference: AW01/1212
- ATS reference: 214446
- Brand: LEOREX

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STUDY SUMMARY

EVALUATION OF THE IMMEDIATE AND LONG-TERM ANTI-WRINKLE AND HYDRATING EFFECTS OF BOOSTER HWNB (AW01/1212), APPLIED IN NORMAL CONDITIONS OF USE, DURING 28 DAYS, BY 15 ADULT VOLUNTEERS: **Efficacy test**

◆ **Product tested:** BOOSTER HWNB

◆ **Promoter:** LEOREX

◆ **Sponsor :** H.ADHOUTE

◆ **Objective:**

The aim of the study is to assess the immediate and long-term anti-wrinkle and hydrating efficiency of Booster HWND, applied in normal conditions of use after one application and during 28 days, by 15 volunteers on crow's foot wrinkles and cheeks. The irritancy effect was measured by Colorimetric technique.

◆ **Study site:** EUROFINS ATS,
ACTIMART
3 allée des Ingénieurs
1140 rue André Ampère
13851 AIX EN PROVENCE cedex 3
FRANCE

◆ **Study date:** From 26/05/2008 to 26/06/2008

◆ **Method:**

✓ **Product application:**

Area of application: face (crow's foot and cheek);

Quantity of product: as much as necessary,

Frequency and duration: daily during 28 days

Application: apply on clean and dry skin on the face, leave to dry and rinse.

✓ **Assessment method:**

1. Anti-wrinkle effect:

Measurements and pictures by contactless fringes projection using a GFM PRIMOS device (crow's foot and cheek area). Analysed parameters:

1. **R_a** (Arithmetic average of the profile roughness peaks with the total measuring lengths)
2. **R_t** (Arithmetic average value of amplitudes of the 5 highest profile peaks and the 5 deepest profile valleys in the single measuring lengths).
3. **R_z** (Average maximum height of the profile)

2. Hydrating effect:
Electrical measurement by Corneometer CM825 CK Electronic and Trans Epidermal Water Loss by Tewameter TM300 CK Electronic.
3. Colour and skin irritancy by Chromameter MINOLTA (Analysed parameters: L*,a*,b* System).
4. The cosmetic qualities of the product are assessed through an acceptability questionnaire filled by the volunteers.

◆ **Panel:** 15 Caucasian healthy female volunteers aged from 35 to 65 years, presenting crow's foot wrinkles.

◆ RESULTS

✓ **Assessment of the immediate and long-term anti-wrinkle effect**

The evolution of the standard roughness parameters shows a statistically significant decrease of the depth of the wrinkles 30 minutes and 2 hours after application of BOOSTER HWNB (in average -16.4% with p<0.05 for all of these parameters). After 30 minutes, the wrinkles depth (Ra parameter) can be reduced by up to -44% for volunteer COGCL. Then, these parameters increase until 8 hours after application without reaching the initial level. A significant decrease of the wrinkles depth is noticed after 24 hours (in average – 26% with p<0.002 for all parameters). Ra is reduced by up to 48.6% for volunteer COGCL.

The long-term efficiency of BOOSTER HWNB is confirmed by the significant decrease of the wrinkles depth after 28 days of use: -29.5% in average with p<0.05. Ra parameter is reduced by up to 49% for volunteer CHAFR after 28 days.

✓ **Assessment of the immediate hydrating effect**

Both, electrical (Corneometer) and Trans Epidermal Water Loss measurements show a decrease of the skin moisture, statistically significant at T30mn (in average -8% with p<0.05 at 30mn by Corneometer) and T2h (+12.7% TEWL with p<0.05) after application of BOOSTER HWNB. It increases then slightly until 8 hours but remains below the initial value and not significantly. The moisture is back close to the initial value after 24 hours.

This increase of the skin dryness can be partly explained by the fact that the product must be rinsed with water.

Those results show the need to apply an hydrating cream after using BOOSTER HWNB.

✓ **Skin colour and irritancy**

The variations of the skin colours parameters L*, a*, b* versus untreated zone are very low and not statistically significant.

ITA° is stable from T0 until 24 hours but significantly increases after 28 days (+4.5° in average). This variation shows an increase of the skin brightness. The product seems to have a long-term whitening effect on the skin.

No erythema was observed for the length of the study.

✓ **Assessment of the cosmetic acceptability (cosmetic qualities and performances) by the volunteers**

The cosmetic qualities of BOOSTER HWNB have been assessed by the panellists through an acceptability questionnaire. BOOSTER HWNB has been well appreciated by most of the volunteers with a satisfaction rate of 63%. However, it seems that the application time is a constraint for some of them.

The comments given by the volunteers are in accordance with the measurements obtained. Indeed, they noticed a decrease of the skin moisture after the application of the product. Most of them also saw a visible improvement of the pores size and felt their skin smoother.

The purchase intention of BOOSTER HWNB is 62%.

◆ **CONCLUSION**

BOOSTER HWNB has a significant immediate effect on the crow's foot wrinkles. The measurements by fringes projection on 15 volunteers show that the average roughness parameter is reduced by 16.4% in average after 30 minutes and up to 44% for some volunteer. A daily use of BOOSTER HWNB during 28 days leads to a decrease of up to 30% in average of the wrinkles depth and -50% for one of the volunteer. The product slightly increases the skin dryness. Thus, it is necessary to use an hydrating day cream. BOOSTER HWNB has a significant long-term whitening effect on the skin.

BOOSTER HWNB has been well appreciated by the volunteers who were able to see and feel its anti-wrinkles and skin texture improving efficiency.

AUTHENTICITY OF THE RESULTS

The study concerned by this report has been carried out under my responsibility, according to the experimental method, the quality plan of EUROFINS ATS laboratory, and in respect with the Good Clinical Practices.

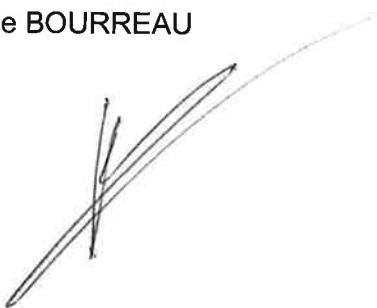
All observations and data taken down during this test are reported in this study.

Study Manager, Marie-Anne PEUCHOT



After rereading, I certify this information conform to the reality of the obtained results,

Investigator, Emilie BOURREAU



I certify the rereading of this report and do agree with its content,

Quality Control Manager, Claire DULON

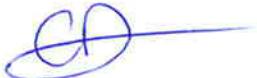


TABLE OF CONTENT

STUDY SUMMARY	2
AUTHENTICITY OF THE RESULTS	5
1 AIM	8
2 PRINCIPLE.....	8
3 STUDY TYPE	8
4 PRE REQUIRED, CONFIDENTIALITY AND REGULATORY.....	9
4.1 Confidentiality.....	9
4.2 Regulatory.....	9
4.3 Archiving	9
5 PANEL STUDIED	10
5.1 Number.....	10
5.2 Characteristics	10
5.3 Inclusion criteria	10
5.4 Non inclusion criteria	10
5.5 Recruitment, selection and final admittance of volunteers for a study.....	11
5.6 Banning and restrictions.....	11
5.7 Withdrawal of volunteers	11
6 PRODUCT TO TEST	12
7 CLINICAL STUDY.....	12
7.1 Product application.....	12
7.2 Development of the study.....	12
7.3 Measurements	13
7.3.1 Assessment of the immediate and long-term anti-wrinkles effect.....	13
7.3.2 Assessment of the immediate hydrating effect.....	13
7.3.3 Skin colour and irritancy	13
7.3.4 Assessment of the cosmetic acceptability (cosmetic qualities and performances) by the volunteers	13
7.4 Data analysis and interpretation of results.....	14
7.4.1 Assessment of the immediate and long-term anti-wrinkles effect.....	14
7.4.2 Assessment of the immediate hydrating effect.....	14
7.4.3 Colorimetric measurement.....	15
7.4.4 Assessment of the cosmetic acceptability (cosmetic qualities and performances) by the volunteers	15
8 RESULTS	16
8.1 Panel characteristics	16
8.2 Exclusions of volunteers.....	17
8.3 Analysis of the results	17
8.3.1 Assessment of the immediate and long-term anti-wrinkles efficiency.....	17
8.3.2 Assessment of the immediate hydrating effect.....	23
8.3.3 Skin colour and irritancy (immediate and long-term)	24
8.3.4 Assessment of the cosmetic qualities and performances by the volunteers	25

9 DISCUSSION AND CONCLUSION.....	28
9.1 Assessment of the immediate and long-term anti-wrinkles efficiency	28
9.2 Assessment of the immediate hydrating effect	28
9.3 Skin colour and irritancy (immediate and long term)	28
9.4 Assessment of the cosmetic qualities and performances by the volunteers.....	28
9.5 CONCLUSION	29
APPENDICES	30

1 AIM

The objective of the study is to assess the immediate and long-term anti-wrinkle efficiency of Booster HWND and its immediate hydrating effect, applied in normal conditions of use after a single application and then, daily during 28 days, by 15 volunteers on crow's foot wrinkles and cheeks. The irritancy effect was measured by Colorimetric technique.

2 PRINCIPLE

The product is applied once on hemi-face by the investigator on each volunteer. Measurements are carried out before application, after 30 minutes, after 2 hours, 5 hours, 8 hours and 24 hours on the treated and non treated zone. Then, the product is given to the volunteers for a normal use at home during 28 days. The product is applied once a day on the full face in replacement of their usual product.

Assessment of the anti-wrinkles effect is measured by contactless fringe projection using a PRIMOS device (GFMesstechnik, Germany).

Assessment of the hydrating effect is carried out by electrical measurement using a Corneometer CM 825 (CK Electronic) and Trans Epidermal Water Loss measurement by Tewameter TM 300 (CK Electronic).

Colour and skin irritancy are also measured by Chromameter CR 300 (MINOLTA).

The cosmetic qualities of the product are evaluated by the panellists through an adapted questionnaire, prepared before the beginning of the study in collaboration with the sponsor of the study.

3 STUDY TYPE

Research is carried out in accordance with the HELSINKI Declaration (1964) and follows the "Guidelines for the evaluation of the efficacy of cosmetic products", COLIPA, 2001. The premises, equipment and the staff are in keeping with the actual regulations and follow the Good Clinical Practice.

The ethical requirements, necessary for the development of studies on human, are respected:

- ✓ Panellists are selected according to the inclusion and non inclusion criteria (see 5.3 and 5.4)
- ✓ All panellists are informed of the aim and the study type, the foreseeable risks they are taking by participating in the study, and give their free and informed consent, before starting the study.
- ✓ Before exposing the volunteers to the products to be tested, basic information concerning the safety of the products are asked to the sponsor.
- ✓ All precautions are taken to avoid causing excessive skin reactions or harmful effects to the health of the volunteers during the study.
- ✓ Safety procedures are set up, in case of harmful or unacceptable reactions, including medical safety equipment.
- ✓ The volunteers are paid as a compensation for the time spent and inconveniences caused.

4 PRE REQUIRED, CONFIDENTIALITY AND REGULATORY

4.1 Confidentiality

All information concerning the health of the panellists, collected during their final admittance in the EUROFINS volunteers database, and necessary for their recruitment and their selection within the context of the studies, is strictly confidential and is subjected to the rule of medical secret following article 378 of the "Code Penal" and the Code of Medical Ethics (decree of 18 June 1979, articles 11, 12 and 13).

The anonymity of the panellists is respected within the context of the studies. However, each volunteer participating to the test can be easily identified by the investigation Doctor and the persons involved in the test by using his personal volunteer code.

In accordance with the law n° 2004-806 of the 9th August 2008 (J.O.R.F. of the 11 August 2004 – NOR: SANX0300055L), relating to the public health policy, the nature of the products studied, the tests, the test results are strictly confidential, and the secret is respected by the Investigating Doctor and by all people involved in the study.

4.2 Regulatory

This study, even though not coming into the application scope of the law n° 2004-806 of the 9th August 2004 (J.O.R.F. of the 11 August 2004 – NOR: SANX0300055L), relating to the public health policy, will be lead according to this law. It will be carried out in accordance with the most recent recommendations of the World Medical Association (Helsinki Declaration 1964, 48th Somerset West General Assembly, October 1996).

No information will be communicated to the national file of people who participate in biomedical research and the opinion of the Advisory Committee will not be requested.

4.3 Archiving

The laboratory book containing all the information (raw data) regarding the study and the study reports are kept in the EUROFINS archiving (Pôle d'activité d'Aix les Milles - ACTIMART – 3 allée des Ingénieurs, 1140 rue André Ampère – 13851 AIX EN PROVENCE), during 10 years.

5 PANEL STUDIED

5.1 Number

22 volunteers were recruited for this study. The product has been tested by 17 volunteers. The test is carried out in open.

5.2 Characteristics

The volunteers are people stemming from the general volunteer panel of EUROFINS ATS. All volunteers registered in the database have been recruited according to the inclusion and exclusion criteria detailed in paragraphs 5.3 and 5.4 and have been subjected, before their final admittance to the database, to a medical examination (health certificate) and a dermatological examination with the recruiting company doctor.

5.3 Inclusion criteria

Volunteers are included if they meet with the following criteria:

- ✓ Age : 35-65 years old,
- ✓ Sex: female,
- ✓ Presenting crow's foot wrinkles,
- ✓ Social security cover: volunteers must be affiliated to a social security system.
- ✓ Free of all dermatological lesions on the site studied,
- ✓ Volunteers able to show proof of home address,
- ✓ Understanding of the French language and able to understand the requirements of the test.

5.4 Non inclusion criteria

- ✓ Volunteers not showing the aforementioned criteria of inclusion,
- ✓ Volunteers within an exclusion period between two tests,
- ✓ Minors or people of age protected by the law and people admitted to a health or social establishment for purposes other than research (article L209-6)
- ✓ People deprived of freedom through legal or administrative decision, ill in an emergency situation (article L209-5),
- ✓ Pregnant or breast-feeding women,
- ✓ Volunteers showing a progressive skin pathology, a known contact allergy linked to the ingredients of the product to be tested,
- ✓ Volunteers refusing to give their agreement and refusing to sign the consent form,
- ✓ Volunteers under antihistamines, corticoid, desensitisation treatment and/or any treatment likely to interfere with skin metabolism,
- ✓ Volunteers presenting a skin recently submitted to sun or suffering PUVA therapy sessions.

5.5 Recruitment, selection and final admittance of volunteers for a study

Using the volunteers database, the panellists who meet with the inclusion criteria are called and finally admitted in the study after a preliminary interview and a dermatological exam.

During this preliminary interview, the objective, the protocol, the study timings, the payment methods, as well as possible benefits to be expected, the constraints linked to the study and the foreseeable risks, including in case of stopping the test before the end, are explained to the volunteers.

The panellists must then read and sign a free, informed and intentional consent form.

The volunteers must also fill in a pre-study medical auto-questionnaire, to ensure that the inclusion and non inclusion criteria are properly respected, before their final admittance to the study.

5.6 Banning and restrictions

For the whole length of the study, the volunteers are asked:

- ✓ Not to modify their cosmetic and health habits,
- ✓ Not to use another similar cosmetic product than the one to test,
- ✓ Not to take aspirin, antihistamines, corticoids, anti-inflammatory products that may interfere with the test results.
- ✓ Not to expose themselves to sun.

5.7 Withdrawal of volunteers

A volunteer may be excluded from the study for the following reasons:

- ✓ He no longer follows the requirements and constraints of the study, explained during the signing of the consent.
- ✓ He suffers from an illness developed during the study which may interfere with the objectives of the study,
- ✓ He no longer wishes to take part in the study.

6 PRODUCT TO TEST

✓ Product Name:	BOOSTER HWNB
✓ Brand:	LEOREX
✓ Reference:	AW01/1212
✓ Code identification for the study:	214446
✓ Presentation (galenic shape, colour):	white viscous cream
✓ Container:	individual aluminium bag
✓ Number of samples received:	approximately 1000
✓ Use by:	March 2010
✓ Storage conditions:	Out of light and heat
A sample of the tested product is kept within EUROFINS-ATS laboratory, during 2 months after the end of the study. After this date and except contrary advice from the study manager, the product will be destroyed.	
✓ Solvent (if required)	water

7 CLINICAL STUDY

7.1 Product application

The first application is done by the technician, the others by the panellist at home, according to the following recommendations (established with the study sponsor):

- ✓ Area of application: face (crow's foot area and cheeks)
- ✓ Quantity: as much as necessary
- ✓ Frequency: daily during 28 days
- ✓ Recommendations: apply on clean and dry skin on the face, leave to dry and rinse off.

7.2 Development of the study

J-1 to 2 weeks

Selection of the panellists

J0

The panellists arrive without having applied any cosmetic product on their face. They are installed in the testing room ($T = 23^\circ\text{C} \pm 2^\circ\text{C}$ and $\text{RH} = 40\% - 60\%$) during 30 minutes. During this time, they sign the information and consent forms. Those 2 documents are co-signed by the study manager. After 30 minutes, measurements are taken (T0).

Then, the product is applied on the hemi-face on the cheek and the crow's foot area by the technician (application on clean and dry skin, leave the product to dry for 15 minutes and rinse).

30 minutes after the removal of the product, the second measurements are taken. Those measurements are repeated after 2 hours, 5 hours and 8 hours.

The application is randomised (see randomisation table in Appendix I).

For each kinetic, the panellists are asked to answer a questionnaire.

J1

The panellists arrive without having applied any cosmetic product on their face. They are installed in the testing room ($T = 23^\circ\text{C} \pm 2^\circ\text{C}$ and $\text{RH} = 40\% - 60\%$) during 30 minutes.

Measurements are taken. 28 samples of the product to test and the acceptability questionnaire are given to the panellists.

J28

The panellists arrive without having applied any cosmetic product on their face. They are installed in the testing room ($T = 23^\circ\text{C} \pm 2^\circ\text{C}$ and $\text{RH} = 40\% - 60\%$) during 30 minutes.
The remaining products and the questionnaires are collected back.
Measurements are taken.

7.3 Measurements

7.3.1 Assessment of the immediate and long-term anti-wrinkles effect

The anti-wrinkle effect is assessed by contactless fringe projection measurements using a PRIMOS device (GFMesstechnik, Germany).

Pictures are taken to illustrate the measurements.

7.3.2 Assessment of the immediate hydrating effect

Assessment of the hydrating effect is measured by electrical measurement using a Corneometer CM 825 (CK Electronic) and Trans Epidermal Water Loss by Tewameter TM 300 (CK Electronic).

7.3.3 Skin colour and irritancy

The skin colour is assessed by colorimetric measurement using a Chromameter CR300 (MINOLTA). A measuring zone is marked using a dermatographic pencil on each cheek. Three measurements are taken on each time. The studied parameters are L^* , a^* , b^* , ITA° .

7.3.4 Assessment of the cosmetic acceptability (cosmetic qualities and performances) by the volunteers

The volunteers are asked to evaluate the aspect of their skin using a scale from 0 to 10 (see Appendix IX)

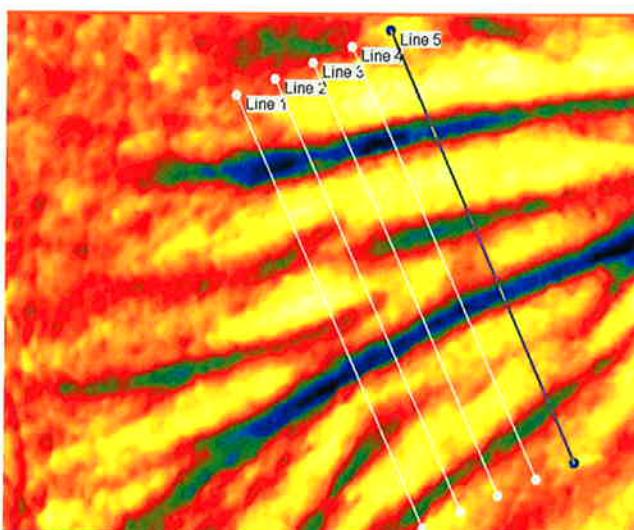
The cosmetic qualities and the performances of the product are assessed by the volunteers, through an adapted questionnaire (elaborated with the study sponsor), after using the product in normal conditions, at home, during 28 days.

7.4 Data analysis and interpretation of results

The results obtained are collected, analysed and interpreted by the investigation manager according to the normal conditions of use and regarding the effects investigated by the study manager.

7.4.1 Assessment of the immediate and long-term anti-wrinkles effect

After matching the pictures, the robust high pass filter is applied on each picture and the line roughness (5 lines drawn perpendicularly to the wrinkles) is calculated. The selected part is chosen with large and small wrinkles.



Example of line roughness measurement

The evolution over time of the following roughness parameters allows evaluating the anti-wrinkles efficiency of BOOSTER HWNB:

- ✓ **R_a** (Arithmetic average of the profile roughness peaks with the total measuring lengths).
- ✓ **R_t** (Arithmetic average value of amplitudes of the 5 highest profile peak and the 5 deepest profile valleys in the single measuring lengths).
- ✓ **R_z** (Average maximum height of the profile)

A decrease of these parameters is synonymous of the wrinkles depth decrease. The most relevant parameter to evaluate the wrinkles depth is R_a.

A Student t test is run to evaluate the significance of the results obtained (p<0.05).

7.4.2 Assessment of the immediate hydrating effect

Three measurements are taken with the Corneometer CM 825 on each zone. An average value is calculated. Only one measurement is taken to measure the TEWL.

The variations of each parameter are calculated and corrected by the untreated zone values. A Student t test is run to evaluate if the results obtained are statistically significant (p<0.05).

7.4.3 Colorimetric measurement

For the skin colour evaluation, the shade evolution is calculated:

$$\Delta E = \sqrt{(L_0^* - L_t^*)^2 + (a_0^* - a_t^*)^2 + (b_0^* - b_t^*)^2}.$$

The Individual Typological Angle (ITA°) is also calculated:

$$ITA^\circ = \text{Arc tan} \left[\frac{L^* - 50}{b^*} \right] \times \frac{180}{\pi}.$$

The variations of each parameter are calculated and corrected by the untreated zone values. A Student t test is run to evaluate if the results obtained are statistically significant ($p < 0.05$).

7.4.4 Assessment of the cosmetic acceptability (cosmetic qualities and performances) by the volunteers

The questionnaires allow to evaluate the feelings of the volunteers regarding BOOSTER HWNB when used in normal conditions. The results obtained lead to a value of product acceptance and purchase intention rate.

8 RESULTS

8.1 Panel characteristics

This study has been carried out from the 26/05/2008 to the 26/06/2008 and includes 22 healthy Caucasian females, whose characteristics are presented in Table 1.

Table 1: Panel characteristics

VOL	CODE VOL	Sex	Age (years)	Special event occurred during the study
1	CHAFR	F	62	-
2	COGCL	F	65	-
3	CONJO	F	57	-
4	CONMA11	F	65	-
5	GABYV	F	60	Took the sun just before coming back for measurement at D28
6	GILDR	F	41	Excluded: Not enough wrinkles on the crow's foot
7	GOUTH	F	44	24hrs study only
8	JOLDA	F	62	Excluded: Hairs on the crow's foot
9	KURRE	F	58	24hrs study only
10	LAMBR	F	51	-
11	MARMA11	F	45	24hrs study only
12	MINCA1	F	48	24hrs study only
13	MORGE	F	61	24hrs study only
14	NAKSA1	F	41	Excluded: Not enough wrinkles on the crow's foot
15	NALEL	F	65	-
16	OLLAR	F	59	Aberrant results obtained on crow's foot wrinkles
17	PARFR	F	48	Aberrant results obtained on crow's foot wrinkles
18	PICJO	F	59	-
19	RENMI	F	58	Excluded: Not enough wrinkles on the crow's foot
20	ROCKA	F	36	-
21	TURGE	F	62	Excluded: Solar elastose
22	VICVE	F	46	-
AVERAGE		54		

None of the volunteers selected took a treatment contraindicated with the study.

8.2 Exclusions of volunteers

Twenty two volunteers participated to this study. All gave their opinion regarding the product tested through the acceptability questionnaire.

Four volunteers were excluded because of the lack of wrinkles or hairs on the crow's foot area. One volunteer had a facial solar elastose so she was not able to take part to the study. And one volunteer took the sun just before coming back for the measurement at D28, so the measurements after 28 days were not taken into account.

The measurements on two volunteers (OLLAR and PARFR) lead to aberrant results so they were removed from the anti-wrinkles study.

For the anti-wrinkles measurements, results were obtained for 15 volunteers.

8.3 Analysis of the results

8.3.1 Assessment of the immediate and long-term anti-wrinkles efficiency

The results obtained by line roughness analysis are presented in Appendix II.

The immediate anti-wrinkle efficiency is assessed after a single application of BOOSTER HWNB on the hemi-face. Measurements are taken at T0, after 30mn, 2 hrs, 5 hrs, 8 hrs and 24 hrs in order to evaluate the long-lasting efficiency of the product.

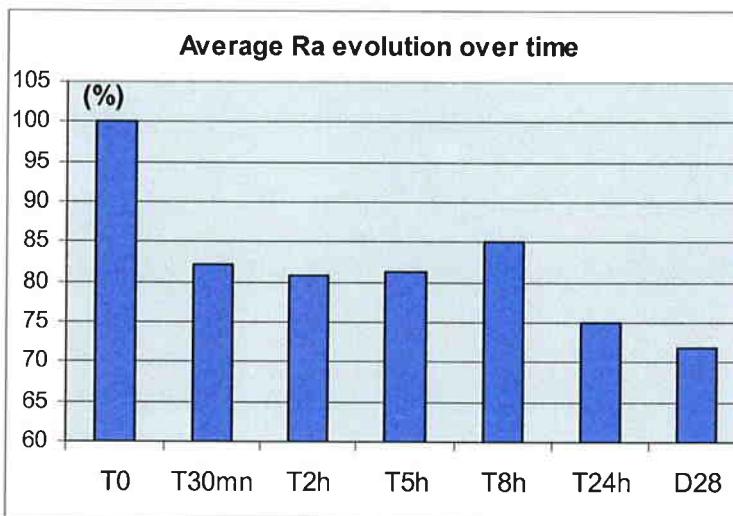
Then, the product is used daily by the volunteers during 28 days and measurements are taken to evaluate the long-term anti-wrinkle efficiency of BOOSTER HWNB.

The average variation of the roughness parameters for all volunteers is presented in Table 2

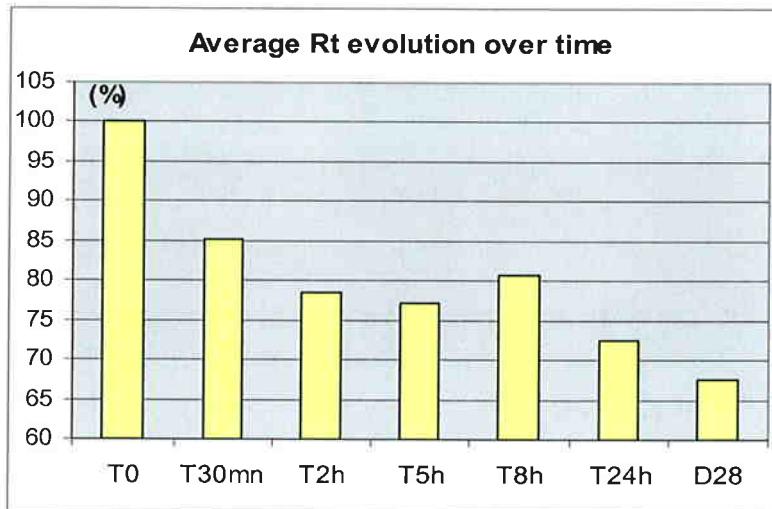
Table 2: average roughness parameters variations for 15 volunteers

Kinetic	Ra (%)			Rt (%)			Rz (%)		
	Average	100-Av	Student t	Average	100-Av	Student t	Average	100-Av	Student t
T0	100,00	0,00		100,00	0,00		100,00	0,00	
T30mn	82,07	-17,93	0,0007	85,11	-14,89	0,0055	83,58	-16,42	0,0006
T2h	80,85	-19,15	0,0005	78,56	-21,44	0,0016	80,52	-19,48	0,0008
T5h	81,19	-18,81	0,0734	77,20	-22,80	0,1089	78,61	-21,39	0,0566
T8h	85,09	-14,91	0,1828	80,79	-19,21	0,3032	85,43	-14,57	0,2608
T24h	75,01	-24,99	0,0007	72,54	-27,46	0,0019	74,08	-25,92	0,0010
D28	71,96	-28,04	0,0044	67,66	-32,34	0,0022	71,85	-28,15	0,0050

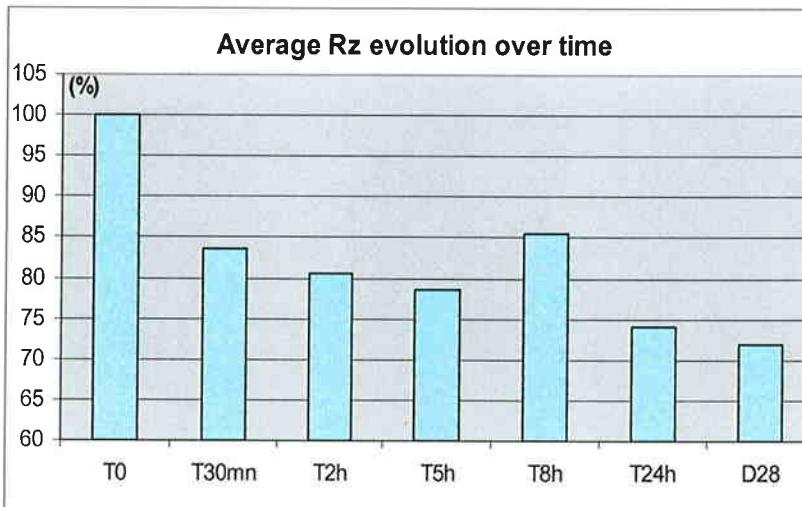
- Ra (Arithmetic average of the profile roughness peaks with the total measuring lengths).



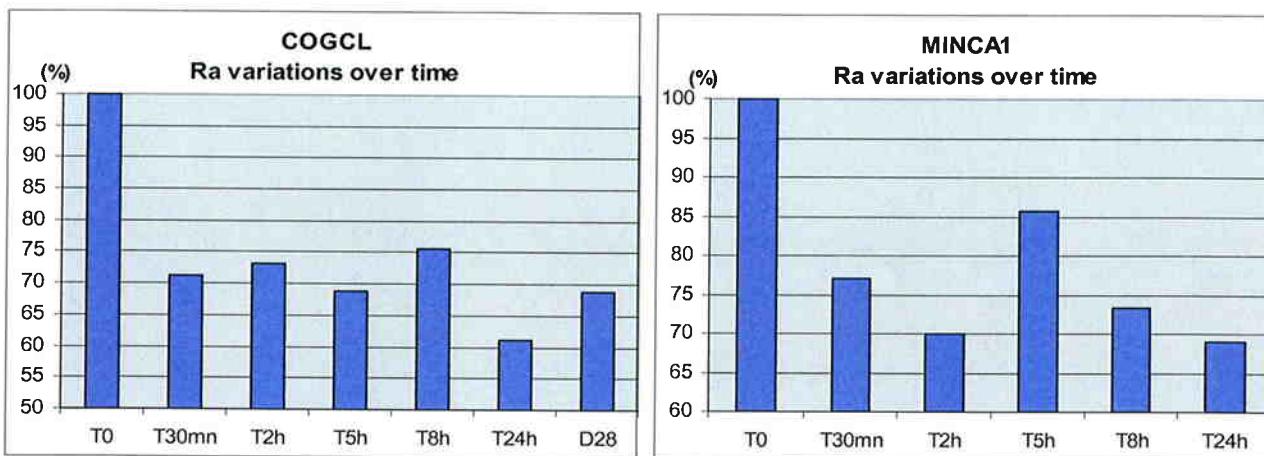
- Rt (Arithmetic average of amplitudes of the 5 highest profile peak and the 5 deepest profile valleys in the single measuring lengths)



- Rz (Average maximum height of the profile)



Ra is the most relevant parameter to look at in order to evaluate the wrinkles depth decrease. The two following graphs show the results obtained for 2 of the volunteers.

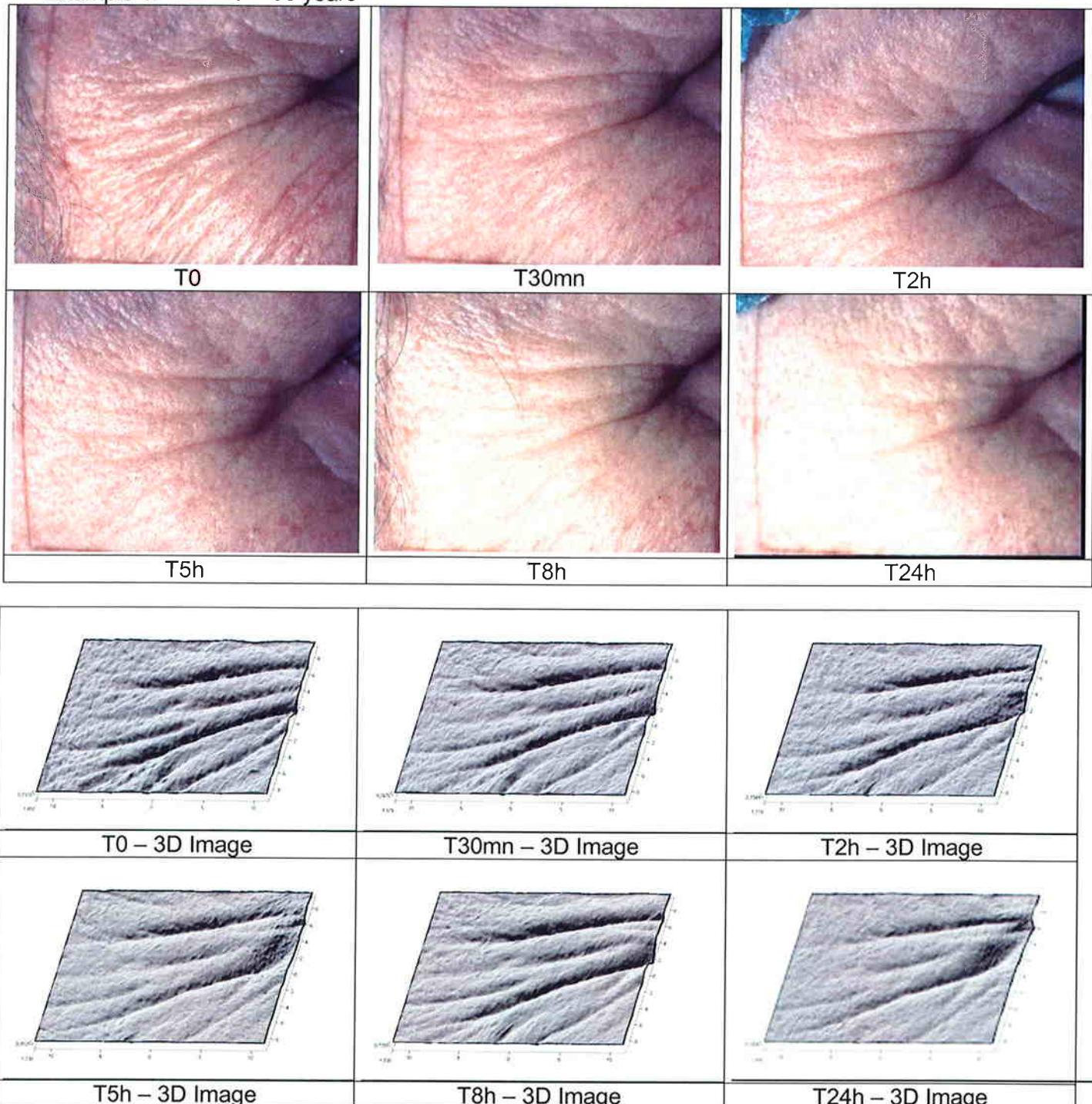


The evolution of the standard roughness parameters shows a statistically significant decrease of the depth of the wrinkles 30 minutes and 2 hours after application of BOOSTER HWNB (in average -16.4% with $p<0.05$ for all of these parameters). After 30 minutes, the wrinkles depth (Ra parameter) can be reduced by up to -44% for volunteer COGCL. Then, these parameters increase until 8 hours after application without reaching the initial level. A significant decrease of the wrinkles depth is noticed after 24 hours (in average – 26% with $p<0.002$ for all parameters). Ra is reduced by up to 48.6% for volunteer COGCL.

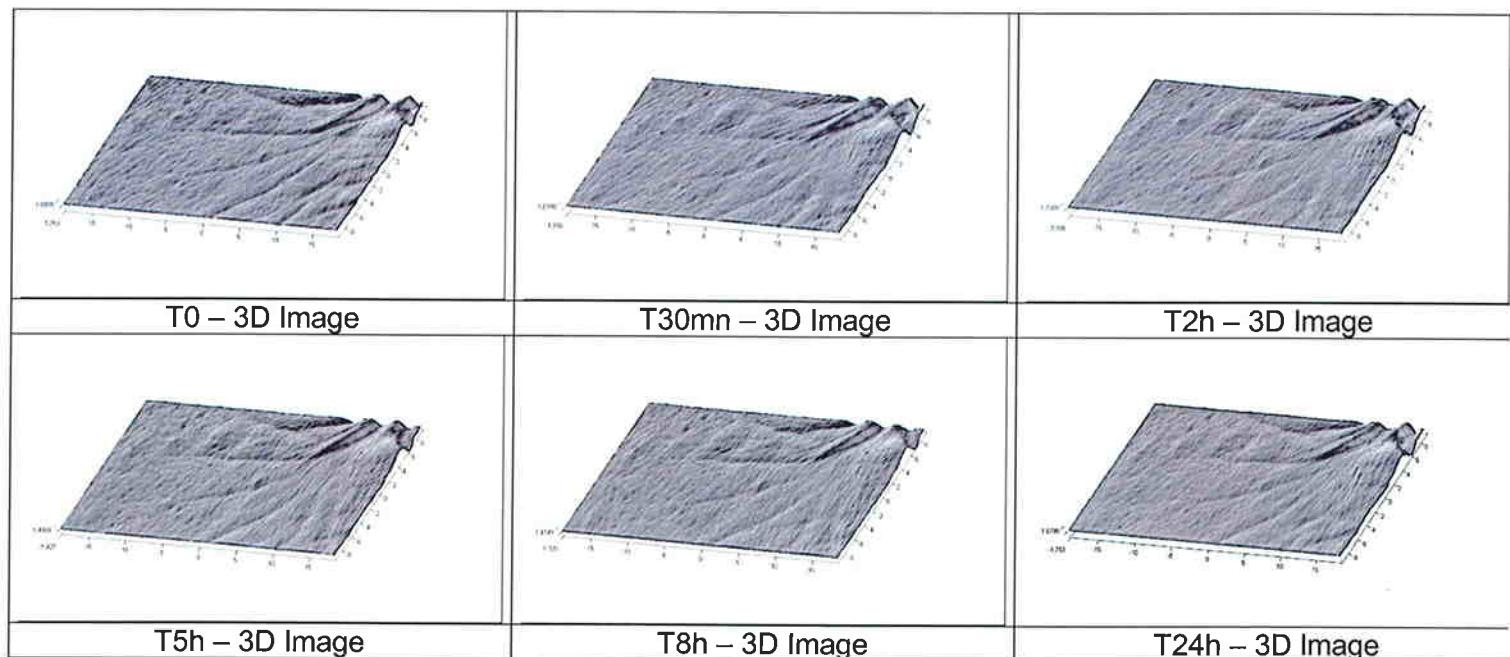
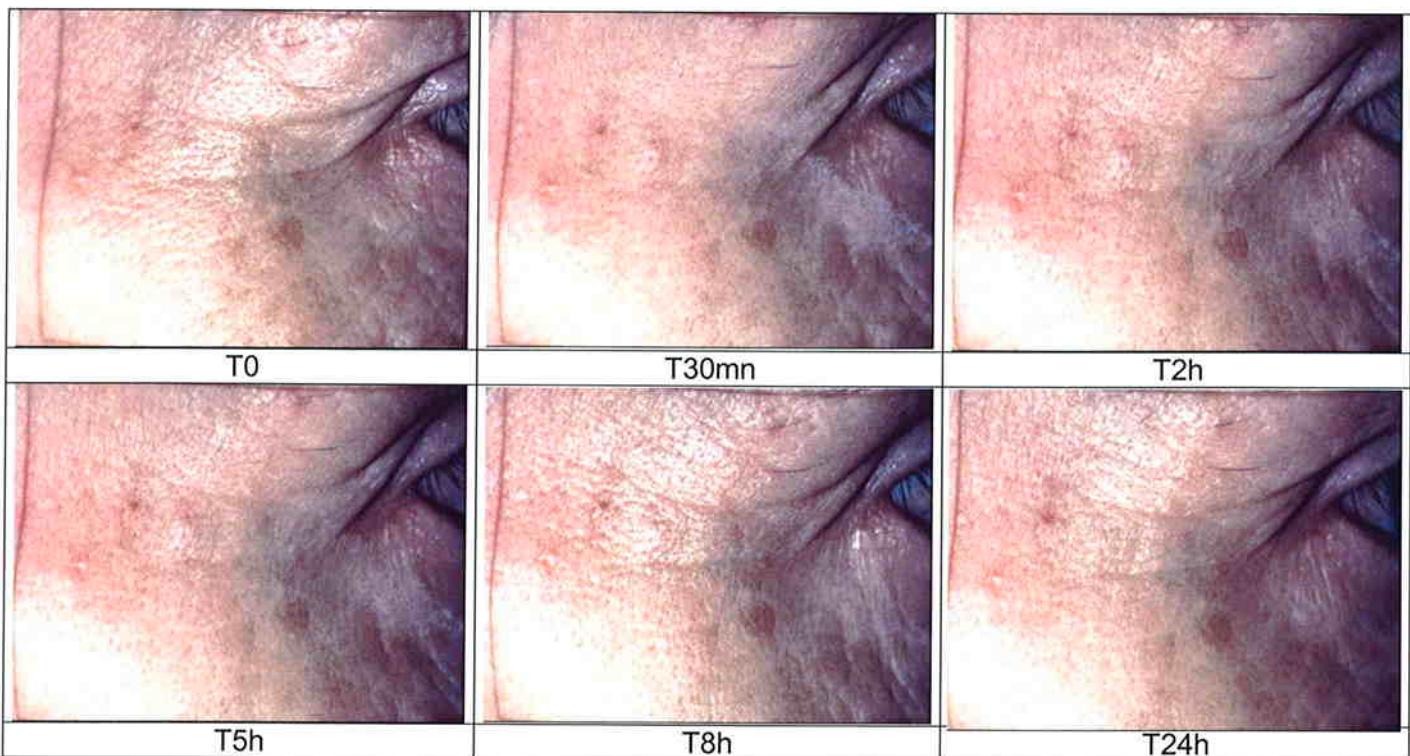
The long-term efficiency of BOOSTER HWNB is confirmed by the significant decrease of the wrinkles depth after 28 days of use: -29.5% in average with $p<0.05$. Ra parameter is reduced by up to 49% for volunteer CHAFR after 28 days.

The following pictures illustrate the results obtained by fringe projection measurement.

Example 1: COGLC – 65 years

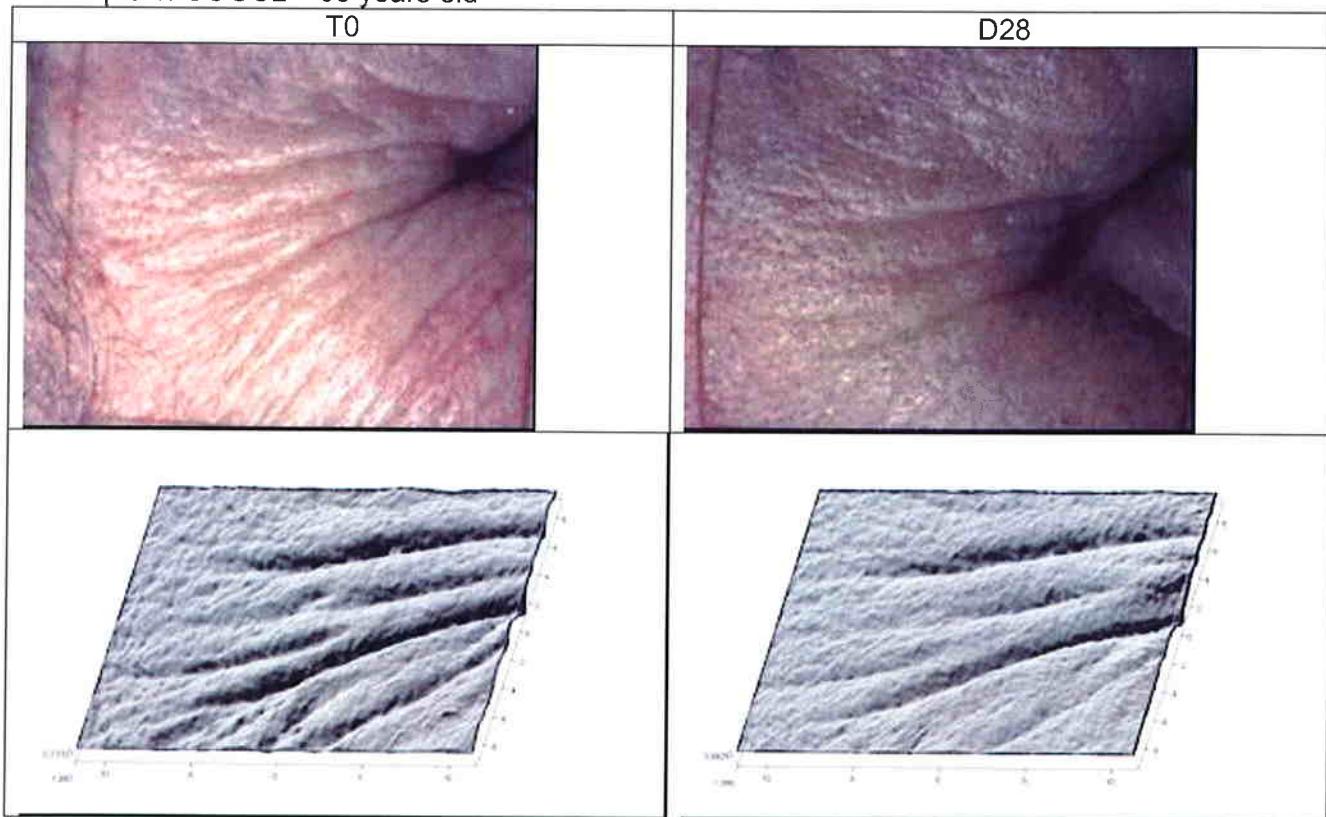


Example 2: MINCA1 – 48 years

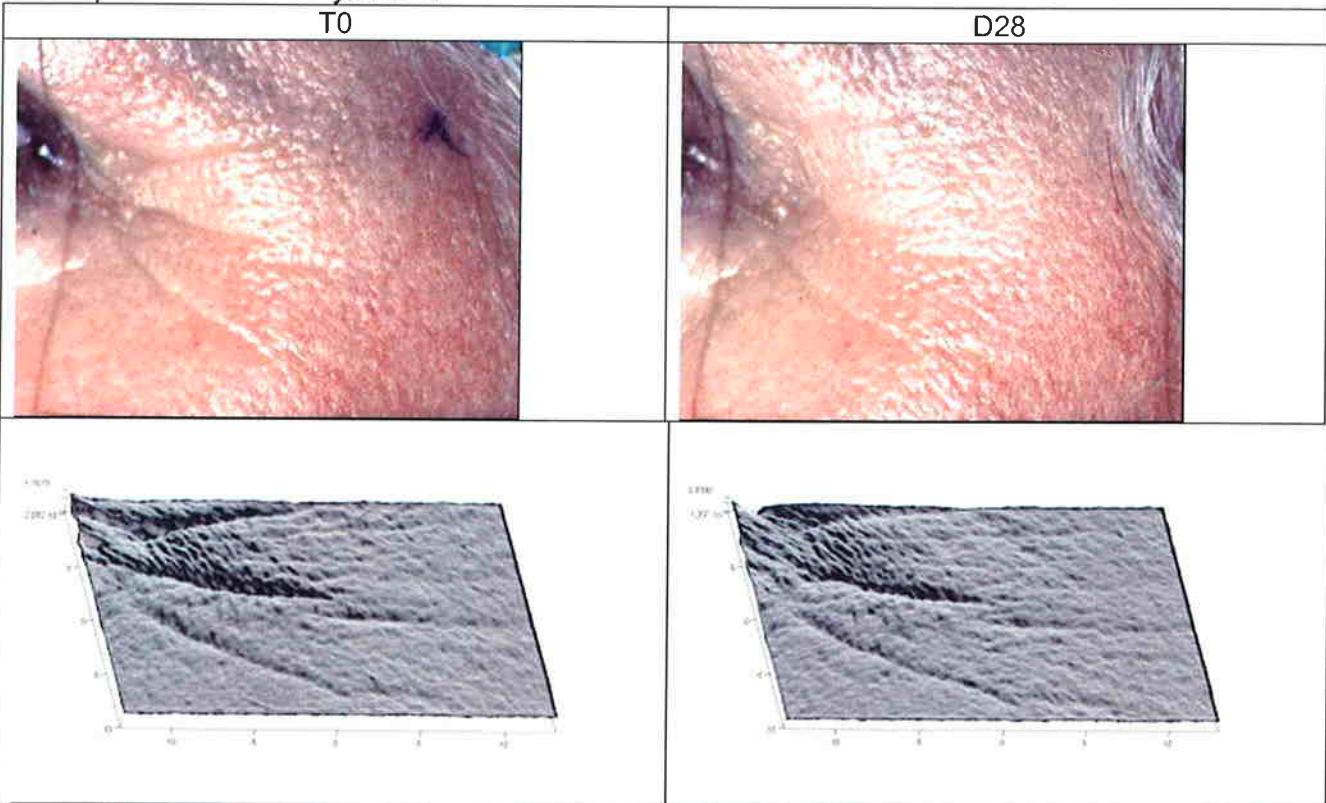


Long-term efficiency:

Example 1: COGCL – 65 years old



Example 2: PICJO – 59 years old



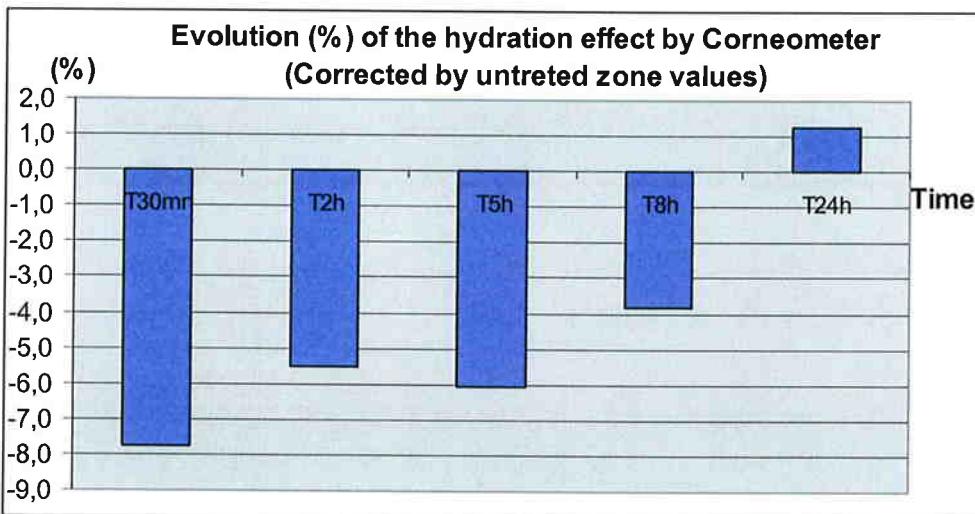
8.3.2 Assessment of the immediate hydrating effect

By Corneometer (Electrical Measurement)

The measurements taken are presented in Appendix III, which summary is presented in Table 3.

Table 3: Average variations of the skin moisture and significativity (Corneometer)

Time	Variations (AU)	Variations (%)	Significativity
T30min	-5.0	-7.8	significant ($p < 0.05$)
T2h	-3.5	-5.5	not significant ($p > 0.05$)
T5h	-4.0	-6.1	not significant ($p > 0.05$)
T8h	-2.5	-3.8	not significant ($p > 0.05$)
T24h	0.9	1.3	not significant ($p > 0.05$)



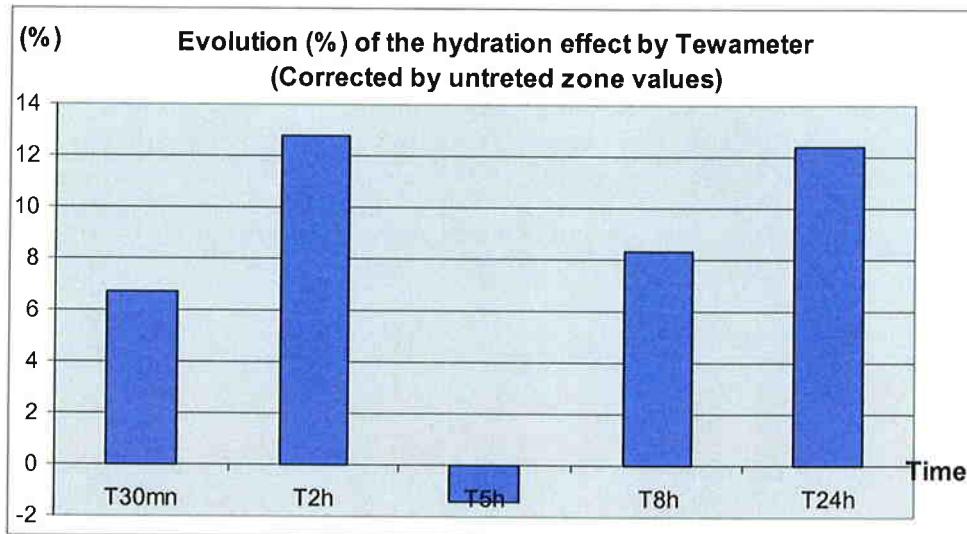
The electrical measurement (Corneometer) shows that moisture decreases (in average - 8% with $p < 0.05$ at 30mn). It increases then slightly until 8 hours but remains below the initial value and not significantly. The moisture is back close to the initial value after 24 hours (+1.3%).

By Tewameter (Trans-Epidermal Water Loss)

The measurements taken are presented in Appendix IV, which results summary is presented in Table 4.

Table 4: Average variations of the skin moisture and significativity (TEWL)

Time	Variations (AU)	Variations (%)	Significativity
T30mn	1.0	6.7	not significant ($p > 0.05$)
T2h	1.6	12.7	significant ($p < 0.05$)
T5h	-0.2	-1.4	not significant ($p > 0.05$)
T8h	1.2	8.3	significant ($p < 0.05$)
T24h	1.5	12.4	not significant ($p > 0.05$)



The Trans Epidermal Water Loss increases also, showing an increase of the stratum corneum dryness. The variations of this parameter are statistically significant at T2h (+12.7% with $p<0.05$) and at T8h (+8.3% with $p<0.05$).

8.3.3 Skin colour and irritancy (immediate and long-term)

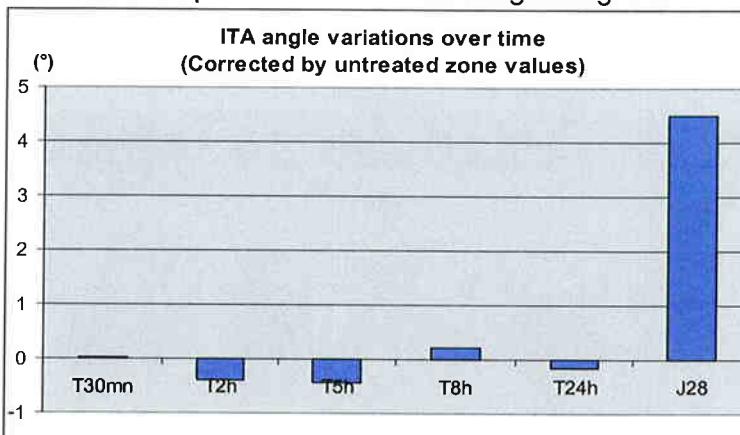
The immediate (until 24 hours) variations of the skin colour parameters (versus untreated zone). Redness (a^*), pigmentation (b^*) and Brightness (L^*) are very small and not statistically significant as shown in Table 5. The measurements and ITA° angle values are presented in Appendix V.

Table 5: Variations of the skin colour parameters versus T0 and corrected by non-treated zone values

	T30mn	T2h	T5h	T8h	T24h	J28
ΔL	0.01	-0.05	0.29	-0.12	-0.19	-1.25
Δa^*	0.00	0.51	0.07	0.35	0.50	0.95
Δb^*	-0.09	-0.33	0.00	-0.12	-0.32	0.55

No erythema was observed at the short time scale, neither after 28 days of use.

ITA° angle variations over time are presented in the following histogram.



ITA° is very stable from T0 until 24 hours but significantly increases (+4.5° in average) after 28 days which shows that the skin is brighter.

8.3.4 Assessment of the cosmetic qualities and performances by the volunteers

The results obtained through the acceptability questionnaire (example Appendix VI) are presented in Appendices VII and VIII.

BOOSTER HWNB has been well appreciated by most of the volunteers with a satisfaction rate of 63%. 31% of the volunteers have a mitigated opinion and only 6% were not satisfied.

The cosmetic qualities of BOOSTER HWNB have been assessed by the panellists through an acceptability questionnaire. The product acceptability is presented in the histogram page 23. The results are presented in Appendix VI.

The qualities most appreciated by the volunteers (satisfaction rate superior or equal to 75%) are:

- ✓ Straight after application, BOOSTER HWNB makes the skin smoother
- ✓ Straight after application, BOOSTER HWNB seems to reduce fine wrinkles and wrinkles
- ✓ Straight after application, BOOSTER HWNB makes the skin lighter
- ✓ After 28 days of use, BOOSTER HWNB makes the skin brighter
- ✓ After 28 days of use, BOOSTER HWNB makes them look well
- ✓ After 28 days of use, BOOSTER HWNB makes the skin smoother
- ✓ After 28 days of use, BOOSTER HWNB. the deepest wrinkles are less visible
- ✓ After 28 days of use, BOOSTER HWNB. the skin of the face is firmer
- ✓ After 28 days of use, BOOSTER HWNB. a global younger effect is noticeable.

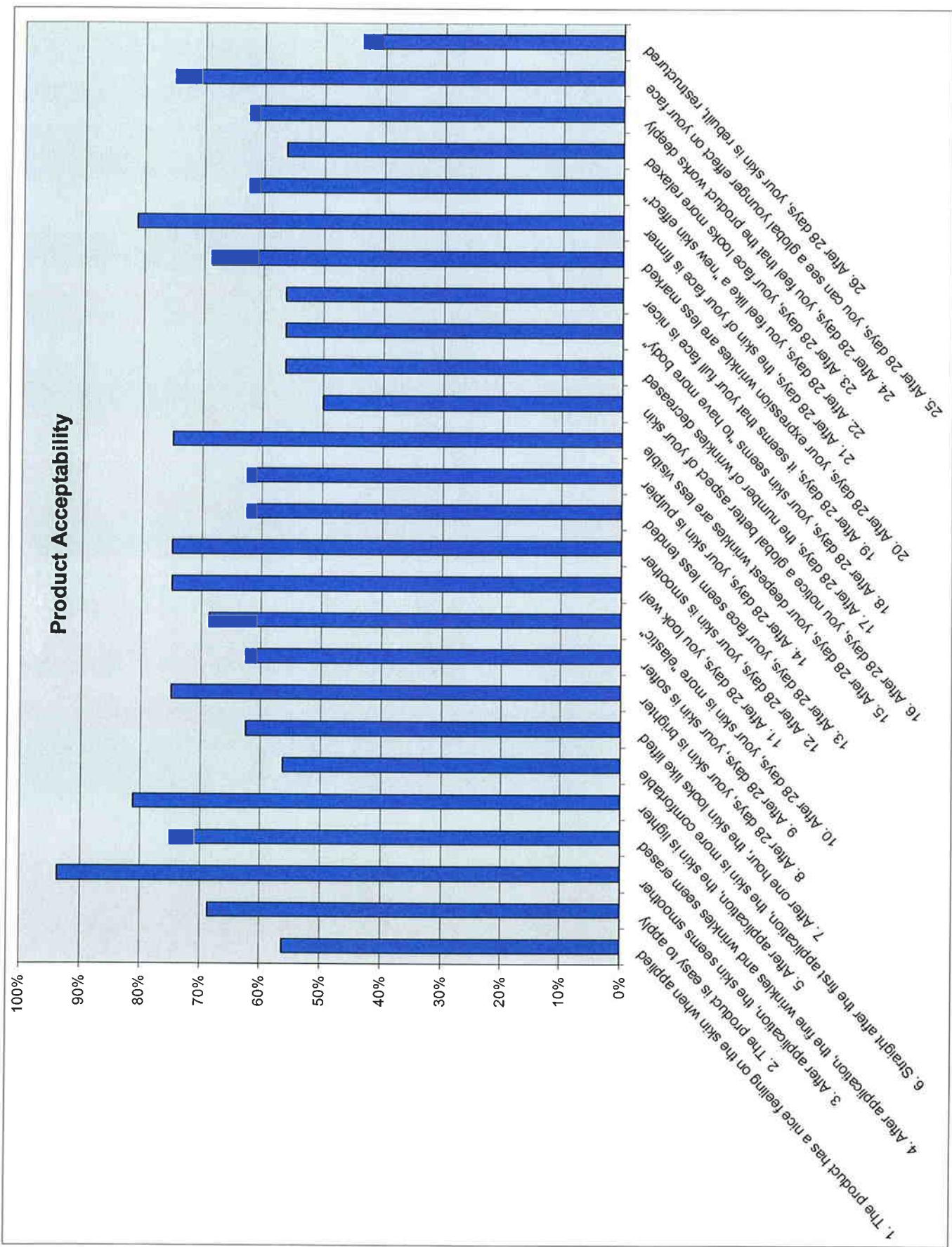
For all the parameters evaluated with the questionnaire, the satisfaction rate is equal or superior to 50%.

Table 6 presents a summary of the main comments given by the volunteers.

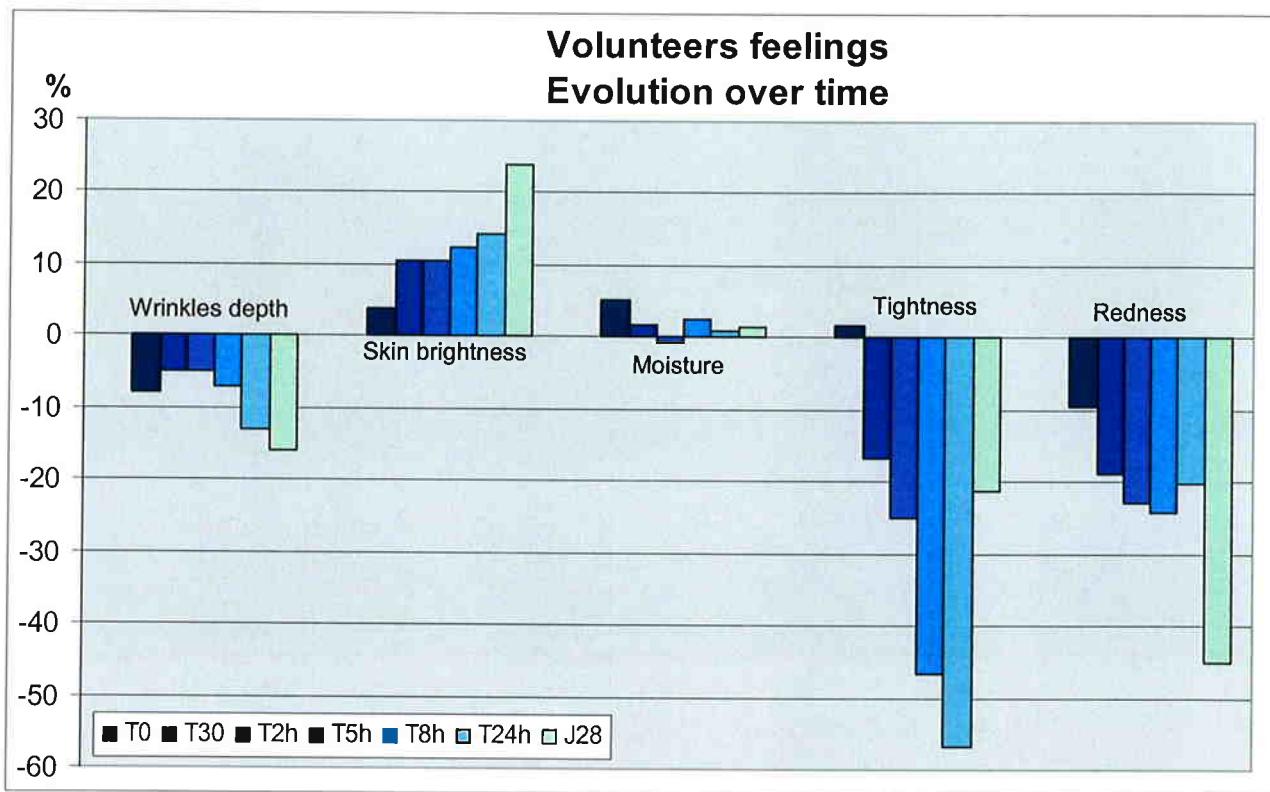
Table 6: Volunteers main comments about BOOSTER HWNB

Positive Comments:
Wrinkles less marked and skin firmer
Clearly visible improvement of my skin texture
Interesting efficiency
I would like to buy the product for the tensing effect on my skin, the pores are less dilated, skin smoother
Skin brighter, complexion nicer, wrinkles less marked
New young skin, significant result, easy to use
Fine wrinkles less marked on the crow's foot area
Pores retightened, nice skin straight after application but don't last
Negative comments
Application difficult and too long: 15min, product unpleasant, smell not nice
I prefer cream rather than mask (quicker)
I didn't feel the improvement I was expecting
Restrictive to use every day (too long). dry the skin
Dry feeling after application

The purchase intention of BOOSTER HWNB is 62%.



The volunteers were asked to evaluate the evolution of several parameters over time. Appendix IX shows the questions asked. Appendix X presents the results obtained.
 The histogram below summarises the results obtained:



The wrinkles depth visibly decreases over time when using BOOSTER HWNB. The volunteers are able to see an effect of the product. The volunteers can also see that the brightness of their skin significantly increases over time. However, the moisture is nearly constant over time. No significant dryness can be noticed. The tightness feeling increases after 30 minutes but decreases significantly over time until 24 hours. Finally, the use of BOOSTER HWNB leads to a visible reduction of the skin redness.

9 DISCUSSION AND CONCLUSION

9.1 Assessment of the immediate and long-term anti-wrinkles efficiency

The evolution of the standard roughness parameters shows a statistically significant immediate anti-wrinkles efficiency of BOOSTER HWNB. Indeed, the depth of the wrinkles is reduced by -16.4% in average 30 minutes and 2 hours after application. After 30 minutes, the wrinkles depth (Ra parameter) can be reduced by up to -44% for volunteer COGCL. Then, the effect of the product dissipates slowly over time until 8 hours after application without reaching the initial level.

A significant decrease of the wrinkles depth is noticed after 24 hours, up to 48.6% for volunteer COGCL. This unexpected result could be explained by a "cyclic" efficiency of the product, even more efficient when people are relaxed. Indeed the measurements after 24 hours were carried out on the morning.

The long-term efficiency of BOOSTER HWNB is confirmed by the significant decrease of the wrinkles depth after 28 days of use: nearly -30% in average. The efficiency is variable from a volunteer to another. Indeed, the wrinkles depth (Ra parameter) is reduced by nearly 50% for volunteer CHAFR after 28 days of daily use.

9.2 Assessment of the immediate hydrating effect

Both, electrical (Corneometer) and Trans Epidermal Water Loss measurements show a decrease of the skin moisture, statistically significant at T30mn and T2h after application of BOOSTER HWNB. This increase of the skin dryness can be partly explained by the fact that the product must be rinsed off with water.

Those results show the need to use a hydrating cream after BOOSTER HWNB.

9.3 Skin colour and irritancy (immediate and long term)

The variations of the skin colours parameters L*, a*, b* versus untreated zone are very small and not statistically significant.

ITA° is stable from T0 until 24 hours but significantly increases after 28 days (+4.5° in average). This variation shows an increase of the skin brightness. The product seems to have a long-term whitening effect.

No erythema was observed for the length of the study.

9.4 Assessment of the cosmetic qualities and performances by the volunteers

The cosmetic qualities of BOOSTER HWNB have been assessed by the panellists through an acceptability questionnaire. BOOSTER HWNB has been well appreciated by most of the volunteers with a satisfaction rate of 63%. However, it seems that the application time is a constraint for some of them.

The comments given by the volunteers are in accordance with the measurements obtained. Indeed, they noticed a decrease of the skin moisture after the product application. Most of them also saw a visible improvement of the pores size and felt their skin smoother.

The purchase intention of BOOSTER HWNB is 62%.

9.5 CONCLUSION

BOOSTER HWNB has a significant immediate effect on the crow's foot wrinkles. The measurements by fringes projection on 15 volunteers show that the average roughness parameter is reduced by 16.4% in average after 30 minutes and up to 44% for some volunteer. A daily use of BOOSTER HWNB during 28 days leads to a decrease of up to 30% in average of the wrinkles depth and -50% for one of the volunteer. The product slightly increases the skin dryness. Thus, it is necessary to use a hydrating day cream. BOOSTER HWNB shows a long-term whitening effect on the skin.

BOOSTER HWNB has been well appreciated by the volunteers who were able to see and feel its anti-wrinkles and skin texture improving efficiency.

APPENDICES

Appendix I: Randomisation table

Appendix II: Line roughness parameters

Appendix III: Corneometric measurements

Appendix IV: TEWL measurements

Appendix V: Colorimetric measurements

Appendix VI: Acceptability questionnaire

Appendix VII: Global satisfaction rate and purchase intentions graph

Appendix VIII: Cosmetic acceptability results

Appendix IX: Time scale: Volunteers' evaluation of their feelings

Appendix X: Results of volunteers' evaluation of their feelings over time

Appendix XI: List of the persons who participated to the study fulfilment

APPENDIX I
Randomisation table

Volunteer code	Treated area	Non treated area
CHAFR	Right	Left
COGCL	Right	Left
GABYV	Right	Left
LAMBR	Right	Left
NALEL	Right	Left
RENMI	Right	Left
MORGE	Right	Left
MINCA1	Right	Left
CONJO	Left	Right
CONMA11	Left	Right
OLLAR	Left	Right
PARFR	Left	Right
PICJO	Left	Right
ROCKA	Left	Right
VICVE	Left	Right
KURRE	Left	Right
GOUTH	Left	Right
MARMA11	Left	Right
GILDR	Left	Right
JOLDA	Left	Right
NAKSA1	Left	Right
TURGE	Left	Right

APPENDIX II

Line Roughness Parameters

R_a (µm) Arithmetic average of the profile roughness peaks with the total measuring lengths.

Kinetic	Average	t-Test	CHAFR	COGCL	CONJO	CONMA11	GABYV	NAEL	PICJO	VICVE	ROCKA	LAMBR	MORGE	MINCA1	MARMA11	KURRE	GOUTH
T0	40,10		32,2	79,2	57,6	30,8	53,1	26,8	24,5	28,5	28,2	35,0	58,4	23,6	26,1	30,7	25,8
T30mn	32,91	0,06	26,5	56,5	32,3	26,6	51,6	25,0	24,4	27,5	25,8	33,7	56,9	18,2	19,1	28,4	21,3
T2h	32,42	0,03	23,0	57,9	37,0	24,9	44,8	29,2	22,6	28,7	23,7	34,6	42,3	16,5	16,4	30,1	22,9
T5h	32,56	0,04	20,1	54,6	36,9	28,7	49,7	22,8	25,8	26,1	28,3		56,6	20,2	19,9	36,8	31,5
T8h	34,12	0,14	20,0	59,8	32,8	38,4	47,3	23,5	31,7	26,8	26,8	31,3	46,5	17,3	20,5	31,8	34,8
T24h	30,08	0,04	19,7	48,4	29,6	26,8	41,0	28,6	27,9	27,2	21,5	29,7	31,5	16,3	20,0	24,1	24,9
D28	28,86	0,01	16,3	54,5	34,3	27,3	30,2	22,3	23,8	25,5	25,5	35,2					

R_t (µm) Arithmetic average value of amplitudes of the 5 highest profile peak and the 5 deepest profile valleys in the single measuring lengths.

Kinetic	Average	t-Test	CHAFR	COGCL	CONJO	CONMA11	GABYV	NAEL	PICJO	VICVE	ROCKA	LAMBR	MORGE	MINCA1	MARMA11	KURRE	GOUTH
T0	326,47		201,8	546,2	518,1	260,8	528,1	177,8	175,2	286,5	243,7	593,9	456,4	164,8	157,7	313,6	276,7
T30mn	277,84	0,11	172,8	463,0	264,1	237,2	507,6	174,5	168,6	301,0	211,8	620,1	462,4	114,2	131,2	276,1	214,7
T2h	256,48	0,05	183,8	439,5	297,5	223,6	314,5	179,1	153,5	310,2	206,6	623,3	381,9	121,6	128,8	283,6	257,3
T5h	252,02	0,02	114,4	365,2	299,7	293,4	432,1	134,9	156,2	255,0	217,3		507,0	147,9	172,7	366,7	326,4
T8h	263,74	0,09	118,7	392,4	282,5	292,5	384,7	157,4	207,0	306,0	232,5	529,0	364,0	148,6	183,9	415,5	322,3
T24h	236,82	0,04	123,0	324,3	241,0	190,4	369,8	198,2	182,8	309,3	192,6	508,0	205,5	116,9	154,0	233,2	271,1
D28	220,88	0,01	96,5	429,4	272,0	192,7	244,4	131,4	123,4	324,3	173,8	559,5					

R_z (µm) Average maximum height of the profile.

Kinetic	Average	t-Test	CHAFR	COGCL	CONJO	CONMA11	GABYV	NAEL	PICJO	VICVE	ROCKA	LAMBR	MORGE	MINCA1	MARMA11	KURRE	GOUTH
T0	191,54		138,4	372,9	268,1	172,0	248,6	130,8	118,8	139,5	134,8	183,3	266,4	108,6	118,6	158,6	128,5
T30mn	160,10	0,06	118,4	282,5	151,5	161,9	232,2	117,0	120,9	138,8	117,7	182,4	248,0	83,5	88,6	130,7	112,8
T2h	154,22	0,04	114,5	254,1	167,2	135,6	199,0	142,9	107,4	149,3	118,0	183,4	189,2	75,0	83,3	142,8	121,7
T5h	150,58	0,04	82,8	226,8	180,0	172,4	221,1	98,4	110,6	134,0	129,1		266,4	93,6	105,1	179,6	162,5
T8h	163,63	0,16	89,4	269,2	157,4	207,2	201,3	111,2	150,5	143,5	143,0	163,8	202,1	86,0	111,1	163,7	176,3
T24h	141,89	0,05	94,2	195,3	136,7	141,4	195,5	135,4	131,4	140,8	106,3	148,8	138,3	79,4	92,4	122,7	135,2
D28	137,63	0,01	67,9	249,3	166,6	136,3	149,7	98,7	108,0	147,7	114,5	191,3					

APPENDIX III

Corneometric measurements

Treated zone (Arbitrary unit)

Vol code	T0				T30				T2h				T5h				T8h				T24h			
NAEL	71,3	75,1	62,7	69,7	67,1	68,2	66,3	67,2	63,4	69,6	72,7	68,6	57,4	64,4	55,6	59,1	69,5	66,4	64,8	66,9	74,6	63,2	63,9	67,23
LAMBR	86,1	77,9	85,8	83,3	56,9	61,8	60,7	59,8	64,6	65,7	66,7	65,7	65,8	52,4	52,8	57	62,8	72,4	70,9	68,7	86,9	78,9	78,3	81,35
CHAFR	78,3	64,5	63,6	68,8	69,9	63,6	69,2	67,6	63,2	64,2	70,9	66,1	69,5	63,1	62,2	64,9	58,8	69,1	60,2	62,7	73,3	61,6	60,5	65,13
COGCL	76,6	78,3	87,9	80,9	68	69,4	54	63,8	71,5	63,7	71,7	69	68,5	73,5	73,6	71,9	73,3	69,8	66,5	69,9	77,5	73,8	68,5	73,27
RENMI	71,7	74,9	56,5	67,7	71,8	67,3	65	68	77,4	61,5	65,6	68,2	77,2	68,3	65,4	70,3	64,1	72	58	64,7	79,7	74,7	75,3	76,57
GABYV	60,8	67,5	46,5	58,3	51,4	50,1	43,5	48,3	52,5	52,9	54,5	53,3	58,9	43	51,6	51,2	63,3	59,1	63,7	62	67,6	59,7	52,4	59,9
OLLAR	67,4	58,6	51,3	59,1	53,6	50,4	66,9	57	55,9	56,4	60	57,4	58,7	58,6	59,6	59	50	49,7	47,9	49,2	50	58,6	59,2	55,93
JOLDA	60,3	62,4	72,9	65,2	60,6	53,5	50,2	54,8	59,6	66,3	65,1	63,7	61	61,7	65,3	62,7	68,3	70,4	71,6	70,1	61	75,8	64,1	66,97
TURGE	73,4	69,4	77,4	73,4	57,8	49,9	57,4	55	66,3	65,7	54,8	62,3	68	66,2	62,3	65,5	60,3	71,7	67,5	66,5	79,2	73,7	76,5	76,47
PICJO	80,1	74,7	68,1	74,3	61,4	57,3	65	61,2	65,2	61,8	58,3	61,8	61,8	60,1	54,8	58,9	66,3	61,8	59,1	62,4	69,1	73,1	61,2	67,8
CONMA11	80,7	77,8	69,4	76	63,8	66,6	53	61,1	54	54,6	43,8	50,8	64,7	71,1	64,5	66,8	71,3	73,6	66,4	70,4	84	87,8	82,6	84,8
CONJO	55,4	50,3	52,8	52,8	56,3	55,6	64,8	58,9	50,9	50	47	49,3	58,3	64,1	57,2	59,9	68,9	63	62,9	64,9	66,1	76,5	73,5	72,03
PARFR	63,5	63,9	55,2	60,9	62,2	62,3	62,5	62,3	65,2	59,9	68,2	64,4	64,1	53,4	69,9	58,8	70	65,7	64,1	66,6	69,2	65	64,8	66,33
VIC	56,2	41	49,5	48,9	46,1	50,8	50,6	49,2	48,2	46,5	48,9	47,9	62,4	63,7	52,3	59,5	55,6	53,7	51,8	53,7	58,9	52,9	65,1	58,97
ROCKA	68,9	64,6	73,1	68,9	69,6	60,3	51,9	60,6	52,1	52,6	48,7	51,1	52,6	58,5	45,8	52,3	56,6	52,3	45,7	51,5	56,3	56,3	53,1	55,23
NAKSA1	81,4	71	77,2	76,5	68,1	58,9	67,8	64,9	62,1	58,2	55,8	58,7	67,2	70,2	73,4	70,3	72,4	63	77,2	70,9	85,1	78,5	74,6	79,4
GILDR	66,1	57,2	74,+6	61,7	62,6	53,6	50,5	55,6	70,5	64,3	63,6	66,1	67,4	65,2	62,6	65,1	61,1	70,3	69,3	66,9	64,5	62,1	56,2	60,93

Untreated zone (Arbitrary unit)

Vol code	T0				T30				T2h				T5h				T8h				T24h			
NAEL	74,1	79,4	69,4	74,3	69	88,2	70,8	76	83,3	80,9	79,9	81,4	74,4	75,2	76,5	75,4	88,4	73,4	73,7	78,5	69,7	53,4	57,8	60,3
LAMBR	90,7	75,4	76,6	80,9	63	80	65,9	69,6	83,5	80,4	72,2	78,7	77,4	79,3	76,1	77,6	82,6	86,2	71,8	80,2	92,9	79,8	94,3	89
CHAFR	40,1	59,5	53,7	51,1	75,5	63,9	66,9	68,8	53,4	68,8	54	58,7	53,9	51	61,6	55,5	61,4	55,6	78,3	65,1	71,7	74,6	59,7	68,67
COGCL	76,1	76,2	80	77,4	68,6	81,1	79,7	76,5	79,7	70,8	73,7	74,7	78,3	68,5	72,9	73,2	80	80,3	69,5	76,6	77,7	69,5	77	74,73
RENMI	64,7	63,8	64,5	64,3	69	78,6	76,7	74,8	78,6	76,1	70,2	75	86,4	69,5	72,8	76,2	59,4	67,2	76,4	67,7	72,6	79,4	72,8	74,93
GABYV	49,8	62,4	49,7	54	57,4	72,3	64,2	64,6	65,9	65,9	56,9	62,9	68,2	58,6	65,6	64,1	63,9	51,3	64,1	59,8	64,3	64	50,4	59,57
OLLAR	66,3	58	62,4	62,2	59,4	59,3	58,7	59,1	61,4	57,1	45,9	54,8	66,9	79	66	70,6	64,2	69,2	68	67,1	76,8	79,7	75,7	77,4
JOLDA	74,7	76,3	70,2	73,7	67,4	72,6	61,2	67,1	65,3	68,5	73,2	69	60,8	70,7	60,3	63,9	68,3	70,7	65,3	68,1	69,4	75,4	69,5	71,43
TURGE	60,9	72	63,5	65,5	60,8	56,5	58	58,4	62,4	57,8	56,4	58,9	62,5	64,9	59,6	62,3	60,6	53,6	62,2	58,8	68,9	71,5	70,5	70,3
PICJO	79,7	77,6	70	75,8	75	72,7	68,8	72,2	69,3	72,4	68,5	70,1	71,5	78	71,2	73,6	74,2	71,9	66,2	70,8	75,8	64,6	71,9	70,77
CONMA11	80,3	83,2	83,5	82,3	79,1	84,9	72,9	79	69,8	77,8	74,3	74	62,2	66,9	79,1	69,4	77,4	71,6	79,8	76,3	85	86,8	85,7	85,83
CONJO	78,7	78,1	63,8	73,5	57,1	67,8	63,9	62,9	51,9	50	46	49,3	58,4	64,3	65,9	62,9	73,7	75,8	54,2	67,9	58,1	63,2	64,9	62,07
PARFR	75,2	73,4	73,9	74,2	58,9	68,5	66	64,5	67,3	58,9	62,4	62,9	72,5	69,9	69,4	70,6	71,5	72,1	71,2	71,6	70,6	70,6	72,6	71,27
VIC	56,9	61,9	63,4	60,7	46,8	54,4	57,8	53	63,1	65,7	61,6	63,5	62,5	63,6	57,3	61,1	56,2	61,6	51,3	56,4	54,6	60,8	62,6	59,33
ROCKA	68,4	65,4	57,6	63,8	58	40,5	45,5	48	51,7	58,5	52,7	54,3	41,8	55,3	46,8	48	51,6	47,5	49,3	49,5	48	48,6	42,4	46,33
NAKSA1	67,8	62	82,5	70,8	68,5	75,1	68	70,5	59,6	66,2	57,1	61	70,7	74,8	71,5	72,3	73,2	79,8	63,7	72,2	76,6	81,7	81,2	79,83
GILDR	72,6	69,3	63,5	68,5	67,4	69,7	50,7	62,6	57,8	63,4	63,5	61,6	75	67,9	69,4	70,8	63,6	74,1	76,7	71,5	61,3	58,9	56,1	58,77

APPENDIX IV

TEWL measurements

Treated zone (Arbitrary unit)

Vol Code	T0	T30	T2h	T5h	T8h	T24h
NALEL	11.14	20.31	17.4	9.84	15.17	6.64
LAMBR	10.68	14.4	13.07	12.32	13.52	8.9
CHAFR	13.67	14.83	12.31	15.32	16.99	12.73
COGCL	11.11	13.54	12.97	10.48	15.37	12.86
RENMI	19.8	20.3	17.68	20.06	20.68	23.79
GABYV	18.5	17.87	15.78	18.06	18.18	20.56
OLLAR	6.23	16.87	9.88	12.42	10.55	8.49
JOLDA	10.52	14.52	13.14	13.81	13.67	9.27
TURGE	11.16	10.79	10.2	11.3	8.93	10.33
PICJO	10.76	12.79	13.42	16.65	15.4	15.37
CONMA11	16.5	19.23	15.87	17.28	17.85	13.65
CONJO	10.73	13	11.9	12.49	12.97	9.07
PARFR	19.05	20.04	18.15	18.27	20.22	19.77
VIC	14.87	22.79	16.52	17.72	19.3	18.62
ROCKA	11.43	11.94	14.44	13.75	12.68	12.91
NAKSA1	10.53	12.51	12.32	13.19	12.34	12.33
GILDR	14.21	13.26	11.77	10.91	15.83	12.01

Untreated zone (Arbitrary unit)

Vol Code	T0	T30	T2h	T5h	T8h	T24h
NALEL	7.75	11.98	15.93	8.82	9.85	5.41
LAMBR	7.69	13.7	9.29	9.34	11.15	8.09
CHAFR	12.73	19.21	16.56	19.19	15.19	12.47
COGCL	10.32	19.21	9.69	12.69	14.43	10.93
RENMI	23.36	23.71	14.62	21.12	18.97	18.06
GABYV	15.45	16	13.98	16.06	15.92	17.15
OLLAR	4.26	7.28	6.98	8.91	7.97	6.18
JOLDA	12.77	13.42	11.67	14.77	12.74	7.77
TURGE	11.6	6.29	7.71	12.37	10.68	6.95
PICJO	11.52	11.81	12.12	12.7	11.91	10.62
CONMA11	16.78	17.4	14.23	19.34	17.62	12.76
CONJO	12.2	9.6	5.64	11.98	10.37	8.73
PARFR	15.9	17.71	12.17	16.12	16.45	17.14
VIC	13.82	15.93	16.25	16.47	17.41	14.03
ROCKA	12.51	13.37	13.67	12.76	13.54	12.44
NAKSA1	8.81	10.88	9.28	9.88	11.09	10.34
GILDR	10.52	11.68	7.36	11.91	11.51	10.3

APPENDIX V

Colorimetric measurements

Treated zone

Vol	Vol. Code	TZ-T0				TZ-T30				TZ-T2h				TZ-T5h				TZ-T8h				TZ-T24h				TZ-J28				Average			
		L	a	b	L	a	b	L	a	b	L	a	b	L	a	b	L	a	b	L	a	b	L	a	b	L	a	b	L	a	b		
1	NAEL	62,7	16,5	12,7	65,3	12,2	14,4	63,1	14,9	13,1	64,8	13,0	13,3	64,3	14,0	13,9	64,6	13,0	13,9	63,0	10,0	16,1	64,0	13,4	13,9	64,0	13,4	13,9	64,0	13,4	13,9		
2	LAMBR	63,0	11,9	19,1	63,8	11,7	18,4	63,5	11,6	18,7	62,4	12,7	18,8	62,7	12,9	18,2	63,5	11,4	19,0	62,1	10,7	16,7	63,0	11,8	18,4	63,0	11,8	18,4	63,0	11,8	18,4		
3	CHAFFR	66,0	13,6	14,9	68,3	10,5	15,9	67,2	11,7	16,3	68,0	10,4	17,5	66,1	13,4	67,8	11,7	15,1	60,7	11,9	17,1	66,3	11,9	15,9	66,3	11,9	15,9	66,3	11,9	15,9			
4	COGCL	62,3	18,4	14,5	63,5	15,7	15,7	65,2	14,1	16,6	63,4	15,7	15,6	62,4	17,1	15,4	63,7	15,8	15,7	59,5	12,3	18,0	62,8	15,6	15,9	62,8	15,6	15,9	62,8	15,6	15,9		
5	RENMI	61,1	16,5	17,1	60,3	17,3	16,5	61,3	15,6	17,8	62,1	15,7	18,1	62,1	14,9	18,4	61,0	15,5	17,3	60,6	12,6	18,1	61,2	15,4	17,6	61,2	15,4	17,6	61,2	15,4	17,6		
6	GABYV	57,3	17,2	19,4	56,6	17,9	19,3	57,9	15,5	20,2	57,2	16,1	20,3	57,7	17,4	19,5	59,0	15,2	20,8				57,6	16,5	19,9	57,6	16,5	19,9	57,6	16,5	19,9		
7	OLLAR	66,4	12,7	15,0	64,7	14,4	13,5	65,4	12,9	14,1	65,4	13,4	14,2	64,4	15,0	13,9	65,0	13,8	14,4	61,8	14,5	17,4	64,7	13,8	14,6	64,7	13,8	14,6	64,7	13,8	14,6		
8	JOLDA	64,5	13,6	14,0	65,3	13,3	14,5	64,3	14,5	13,9	65,0	14,1	14,2	65,5	13,6	14,6	65,0	14,1	14,7	61,7	14,9	16,0	64,5	14,0	14,6	64,5	14,0	14,6	64,5	14,0	14,6		
9	TURGE	60,7	14,7	18,0	60,7	14,6	18,3	60,7	14,8	18,3	60,5	16,7	17,8	61,0	14,1	18,5	61,1	14,7	18,8				60,8	14,9	18,3	60,8	14,9	18,3	60,8	14,9	18,3		
10	PICJO	60,0	20,1	14,2	59,8	19,9	13,4	59,9	19,3	13,6	61,2	18,3	14,0	60,5	18,7	13,8	59,9	20,2	13,8	61,0	16,1	15,4	60,3	19,0	14,0	60,3	19,0	14,0	60,3	19,0	14,0		
11	CONMA11	64,7	14,6	15,3	66,3	12,1	16,6	65,6	12,8	16,2	66,6	11,9	16,8	66,2	12,6	16,6	66,9	11,4	16,8	60,0	16,1	16,4	65,2	13,1	16,4	65,2	13,1	16,4	65,2	13,1	16,4		
12	CONJO	64,6	11,7	17,3	65,6	10,0	17,3	64,3	12,0	17,1	64,6	11,5	16,8	64,9	10,9	16,9	65,1	11,0	17,0	59,7	15,6	17,0	64,1	11,8	17,1	64,1	11,8	17,1	64,1	11,8	17,1		
13	PARFR	63,0	14,4	14,8	64,2	13,7	15,5	64,2	12,7	15,9	63,3	14,2	15,0	63,7	14,0	15,0	64,1	13,5	15,6	60,8	13,5	18,0	63,3	13,7	15,7	63,3	13,7	15,7	63,3	13,7	15,7		
14	VICVE	63,3	13,4	17,9	63,1	13,0	17,7	63,3	12,9	17,9	63,3	13,3	18,0	63,6	13,1	18,1	63,6	12,1	18,0	59,1	14,6	18,2	62,7	13,2	18,0	62,7	13,2	18,0	62,7	13,2	18,0		
15	ROCKA	64,9	13,6	17,3	62,6	15,2	17,1	63,9	14,6	17,2	64,0	13,9	17,3	63,9	13,4	18,4	64,8	13,4	17,4	57,6	15,5	18,7	63,1	14,2	17,6	63,1	14,2	17,6	63,1	14,2	17,6		
16	NAKSA1	61,8	12,6	17,2	62,9	11,3	16,9	61,8	12,8	16,4	62,3	12,2	17,3	62,3	12,5	17,1	61,2	12,6	16,7	55,0	17,1	19,0	61,1	13,0	17,2	61,1	13,0	17,2	61,1	13,0	17,2		
	Average	62,9	14,7	16,2	63,3	13,9	16,3	63,2	13,9	16,4	63,4	13,9	16,6	63,2	14,2	16,4	63,5	13,7	16,6	60,2	14,0	17,3	62,8	14,1	16,5	62,8	14,1	16,5	62,8	14,1	16,5		
	Std deviation	2,37	2,39	1,99	2,87	2,77	1,75	2,38	1,95	2,00	2,54	2,10	1,97	2,23	2,01	1,98	2,46	2,32	1,98	2,03	2,18	1,08	2,17	1,88	2,17	1,88	2,17	1,88	2,17	1,88	2,17	1,88	
	Test Student					0,22	0,08	0,52	0,14	0,03	0,20	0,06	0,07	0,09	0,16	0,11	0,25	0,02	0,01	0,05	0,00	0,55	0,00	0,70	0,05	0,02	0,05	0,02	0,05	0,02	0,05	0,02	

Untreated zone

ITA° angle

	ITA	T0		T30		T2h		T5h		T8h		T24h		J28	
Vol	Vol. Code	TZ	UTZ	TZ	UTZ	TZ	UTZ	TZ	UTZ	TZ	UTZ	TZ	UTZ	TZ	UTZ
1	NALEL	45,0	42,7	46,6	43,8	45,2	44,8	48,0	42,3	45,8	43,6	46,5	43,9	38,9	39,4
2	LAMIBR	34,1	33,3	36,8	35,8	37,3	33,5	34,1	34,8	33,8	35,4	34,7	35,8	35,8	29,3
3	CHAFR	47,0	42,1	49,0	40,2	46,6	45,4	45,7	47,2	48,4	48,5	49,7	48,6	32,1	38,8
4	COGCL	40,4	38,3	40,7	40,1	42,5	36,9	40,6	36,7	38,9	38,8	41,1	38,3	27,8	38,6
5	RENMI	32,9	30,7	32,1	31,6	32,3	30,1	33,8	30,2	33,4	29,8	32,6	27,7	30,4	28,7
6	GABYV	20,4	15,5	18,9	19,4	21,4	19,4	19,5	17,9	21,5	18,9	23,5	23,2		
7	OLLAR	47,5	50,1	47,5	50,3	47,7	48,5	47,4	47,7	46,0	47,5	46,1	48,3	34,1	41,9
8	JOLDA	46,0	43,9	46,5	44,0	45,8	44,8	46,5	45,2	46,6	44,7	45,6	44,5	36,2	39,0
9	TURGE	30,7	27,8	30,3	28,2	30,4	24,4	30,6	30,2	30,8	29,8	30,6	30,5		
10	PICJO	35,2	40,7	36,0	39,4	36,2	40,4	38,5	37,7	37,3	41,3	35,7	35,7	35,6	25,7
11	CONMA11	43,9	44,5	44,4	44,4	43,9	43,1	44,7	44,9	44,4	42,7	45,2	43,2	31,5	38,2
12	CONJO	40,0	46,0	42,0	44,0	39,9	42,4	41,0	42,0	41,4	45,2	41,7	46,1	29,6	40,5
13	PARFR	41,2	40,9	42,6	43,1	41,9	37,6	41,5	40,7	42,4	40,5	42,0	41,0	30,8	34,6
14	VICVE	36,7	35,9	36,5	36,8	36,5	36,9	36,4	36,1	36,9	37,9	37,0	36,4	26,5	22,2
15	ROCKA	40,6	41,7	36,4	42,2	39,0	40,7	39,0	42,3	37,1	40,9	40,5	42,4	22,0	35,0
16	NAKSA1	34,4	38,7	37,4	37,8	35,8	39,3	35,5	37,9	35,7	37,1	33,9	37,5	14,8	28,6
Average		38,7	38,0	39,3	38,7	39,0	38,0	39,1	38,1	39,2	38,8	39,5	38,7	30,4	34,3
Student t														0,482	0,0000 0,0000
														0,037	

APPENDIX VI

ACCEPTABILITY QUESTIONNAIRE

PRODUCT AND QUESTIONNAIRE TO BRING BACK THE 24/06/2008 OR 25/06/08 at 9am

VOLUNTEER LAST NAME	VOLUNTEER FIRST NAME
VOLUNTEER CODE	PRODUCT REFERENCE

TESTED PRODUCT: BOOSTER HWNB

APPLICATION:

- Application zones: face and crows foot area
- Quantity: one bag
- Frequency: once a day every day (morning). during 28 days
- Application: **Use on clean skin. Wet the face with water, apply the product by massaging. Wait until the mask is dry and rinse off with water. Dry the face with a towel and apply a day cream.**

1. How old are you?

- From 35 to 45
 From 45 to 55
 From 55 to 65

2. Tick Yes or No:

- Do you have marked wrinkles? oui non
 - Your skin is less firm? oui non
 - Your skin is less rounded? oui non
3. Were you tanned before using this product?
 Did you loss your suntan during the 28 days of use? oui non

You tested an anti-wrinkle and pore tightening mask during 28 days in replacement of your usual product.

4. In a general way, are you satisfied with the product you tested?

- Totally satisfied Satisfied Neither satisfied nor unsatisfied Not really satisfied Not satisfied at all

5. In which way did you find the product more efficient?

(For example: wrinkles less marked, skin repulped, skin denser, pores tightened, etc.)

6. Did you had uncomfortable feeling when using the product (tightness, redness, tingling, dryness, itching, small spots, other troubles)?

If yes which ones (note the frequency, place and duration):

क्षेत्र, विनाशक उत्तराधिकारी. प्रबले आमा दुष्टालय;

Please give your opinion on the product through the following criteria (tick the appropriate answer):

	Totally agree	Agree	Neither agree nor not agree	Not really agree	Not agree
7. The product has a nice feeling on the skin when applied					
8. The product is easy to apply					
9. After application, the skin seems smoother					
10. After application, the fine wrinkles and wrinkles seem erased					
11. After application, the skin is lighter					
12. Straight after the first application, the skin is more comfortable					
13. After one hour, the skin looks like lifted					
14. After 28 days, your skin is brighter					
15. After 28 days, your skin is softer					
16. After 28 days, your skin is more "elastic"					
17. After 28 days, you look well					
18. After 28 days, your skin is smoother					
19. After 28 days, your face seem less tended					
20. After 28 days, your skin is pulpiet					
21. After 28 days, your deepest wrinkles are less visible					
22. After 28 days, you notice a global better aspect of your skin					
23. After 28 days, the number of wrinkles decreased					
24. After 28 days, your skin seems "to have more body"					
25. After 28 days, it seems that your full face is nicer					
26. After 28 days, your expression wrinkles are less marked					
27. After 28 days, the skin of your face is firmer					
28. After 28 days, you feel like a "new skin effect"					

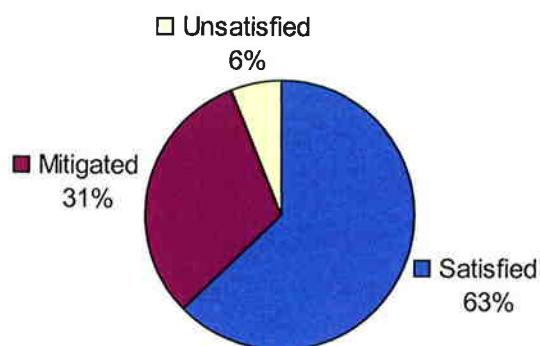
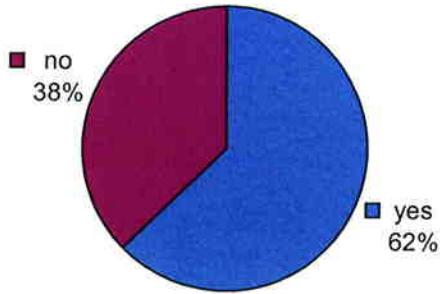
	Totally agree	Agree	Neither agree nor not agree	Not really agree	Not agree
29. After 28 days, your face looks more relaxed					
30. After 28 days, you feel that the product works deeply					
31. After 28 days, you can see a global younger effect on your face					
32. After 28 days, your skin is rebuilt. restructured					

33. Would you buy the product?

Why?

Yes No

.....
.....
.....
.....

APPENDIX VII
Global satisfaction rate and purchase intention graphs**SATISFACTION RATE****PURCHASE INTENTION**

APPENDIX VIII

Cosmetic acceptability results

USE TEST PARAMETERS	Totally agree	Agree	Neither agree. nor not agree	Not really agree	Not agree
1. The product has a nice feeling on the skin when applied	25%	31%	13%	25%	6%
2. The product is easy to apply	6%	63%	19%	13%	0%
3. After application, the skin seems smoother	19%	75%	0%	6%	0%
4. After application, the fine wrinkles and wrinkles seem erased	19%	56%	19%	6%	0%
5. After application, the skin is lighter	13%	69%	13%	6%	0%
6. Straight after the first application, the skin is more comfortable	6%	50%	38%	6%	0%
7. After one hour, the skin looks like lifted	19%	44%	31%	6%	0%
8. After 28 days, your skin is brighter	13%	63%	19%	6%	0%
9. After 28 days, your skin is softer	19%	44%	31%	6%	0%
10. After 28 days, your skin is more "elastic"	13%	56%	25%	6%	0%
11. After 28 days, you look well	0%	75%	25%	0%	0%
12. After 28 days, your skin is smoother	6%	69%	19%	6%	0%
13. After 28 days, your face seem less tended	6%	56%	38%	0%	0%
14. After 28 days, your skin is pulpier	19%	44%	38%	0%	0%
15. After 28 days, your deepest wrinkles are less visible	19%	56%	13%	6%	6%
16. After 28 days, you notice a global better aspect of your skin	13%	38%	44%	0%	6%
17. After 28 days, the number of wrinkles decreased	6%	50%	31%	0%	13%
18. After 28 days, your skin seems "to have more body"	0%	56%	38%	6%	0%
19. After 28 days, it seems that your full face is nicer	6%	50%	38%	6%	0%
20. After 28 days, your expression wrinkles are less marked	13%	56%	31%	0%	0%
21. After 28 days, the skin of your face is firmer	13%	69%	19%	0%	0%
22. After 28 days, you feel like a "new skin effect"	13%	50%	31%	6%	0%
23. After 28 days, your face looks more relaxed	0%	56%	38%	6%	0%
24. After 28 days, you feel that the product works deeply	6%	56%	31%	6%	0%
25. After 28 days, you can see a global younger effect on your face	6%	69%	13%	6%	6%
26. After 28 days, your skin is rebuilt, restructured	6%	38%	44%	13%	0%

APPENDIX IX

Volunteers' evaluation of their feelings over time

Please quote the following parameters on a 0 to 10 scale:

Time:

How do you consider the depth of your wrinkles?

(no wrinkles) 0	<input type="checkbox"/>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 (very deep)
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Your skin is:

(very dull) 0	<input type="checkbox"/>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 (very bright)
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Your skin is:

(very dry) 0	<input type="checkbox"/>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 (very hydrated)
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Do you have a tightness feeling?

(none) 0	<input type="checkbox"/>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 (a lot)
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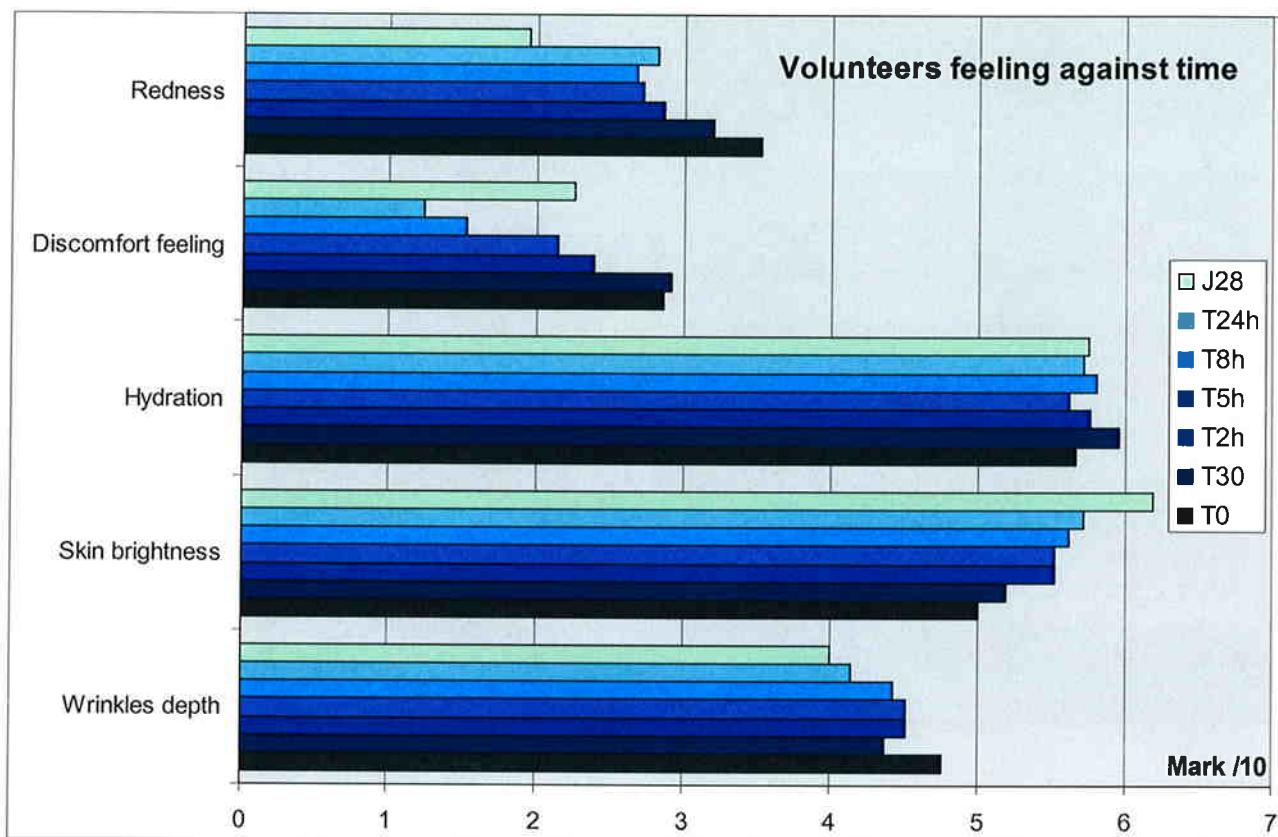
Does your skin present cutaneous redness?

(none) 0	<input type="checkbox"/>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 (a lot)
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APPENDIX X
Results of volunteers' evaluation of their feelings over time

VOL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	TOTAL	AVERAGE	%	
T0																									
Wrinkles depth	5	7	3	5	6	3	5	3	6	2	8	7	5	3	4	5	4	5	4	4	6	100	4,76	0,0	
Skin brightness	6	7	2	6	5	6	6	4	5	2	5	5	5	7	5	7	5	4	4	4	6	3	105	5,00	0,0
Hydration	6	5	1	7	5	6	6	6	6	5	5	7	5	5	7	6	6	7	7	6	5	119	5,67	0,0	
Discomfort feeling	3	1	0	1	5	0	3	1	5	2	5	6	3	8	0	2	1	6	0	5	3	60	2,86	0,0	
Redness	3	8	0	2	5	8	6	0	5	0	1	7	5	5	0	0	3	3	0	6	7	74	3,52	0,0	
T30																									
Wrinkles depth	5	6	2	5	5	3	5	3	6	1	6	7	3	3	4	4	4	5	3	6	6	92	4,38	-8,0	
Skin brightness	7	8	2	6	6	6	7	5	5	2	5	5	5	7	4	7	5	4	5	5	3	109	5,19	3,8	
Hydration	7	8	2	7	6	6	7	5	6	4	5	7	5	8	5	6	6	6	7	6	6	125	5,95	5,0	
Discomfort feeling	2	3	0	1	2	0	2	2	4	3	5	6	4	9	0	7	1	4	0	4	2	61	2,90	1,7	
Redness	0	7	0	2	4	8	5	0	4	3	1	7	3	5	0	0	3	3	0	5	7	67	3,19	-9,5	
T2h																									
Wrinkles depth	5	6	3	5	5	3	6	3	6	1	6	7	3	3	4	7	4	5	3	5	5	95	4,52	-5,0	
Skin brightness	7	7	4	6	7	6	7	5	5	2	5	5	6	7	4	7	5	5	6	6	4	116	5,52	10,5	
Hydration	7	8	2	7	7	4	7	5	6	3	7	6	7	5	5	7	6	4	7	6	5	121	5,76	1,7	
Discomfort feeling	2	4	0	1	0	0	2	0	5	2	1	5	1	8	0	6	1	3	0	6	3	50	2,38	-16,7	
Redness	0	8	0	2	3	8	4	0	5	0	1	7	1	5	0	0	3	2	0	4	7	60	2,86	-18,9	
T5h																									
Wrinkles depth	5	6	3	5	4	3	5	3	6	1	7	7	2	3	4	6	6	5	3	6	5	95	4,52	-5,0	
Skin brightness	7	7	2	6	8	6	6	6	5	2	5	5	7	7	4	7	5	5	6	6	4	116	5,52	10,5	
Hydration	7	8	3	7	8	4	6	6	6	3	6	5	7	0	6	7	6	3	7	7	6	118	5,62	-0,8	
Discomfort feeling	1	2	0	1	0	0	4	5	5	2	1	5	0	0	0	7	1	2	0	7	2	45	2,14	-25,0	
Redness	0	8	0	2	2	8	4	0	5	0	1	7	0	5	0	0	3	1	0	4	7	57	2,71	-23,0	
T8h																									
Wrinkles depth	5	6	3	5	3	3	6	3	6	1	7	7	1	3	4	6	6	5	2	6	5	93	4,43	-7,0	
Skin brightness	7	7	2	6	8	6	7	6	5	2	5	5	8	7	4	7	5	4	6	6	5	118	5,62	12,4	
Hydration	7	6	3	7	8	4	7	6	6	3	6	5	8	0	5	7	6	8	7	7	6	122	5,81	2,5	
Discomfort feeling	0	2	0	1	0	0	2	0	5	2	1	5	0	0	0	7	1	0	0	4	2	32	1,52	-46,7	
Redness	0	9	0	2	2	8	4	0	5	0	1	7	0	5	0	0	3	0	0	3	7	56	2,67	-24,3	
T24h																									
Wrinkles depth	5	6	3	5	2	2	6	3	6	1	7	7	1	3	4	5	6	3	3	6	3	87	4,14	-13,0	
Skin brightness	7	7	2	7	8	6	7	6	5	2	5	5	8	7	4	7	5	8	5	6	3	120	5,71	14,3	
Hydration	7	7	3	7	8	4	7	7	6	2	6	4	8	0	5	7	6	8	5	6	7	120	5,71	0,8	
Discomfort feeling	0	2	0	0	0	0	2	0	2	1	1	4	0	0	0	7	1	0	0	5	1	26	1,24	-56,7	
Redness	4	8	0	2	1	8	4	0	5	0	1	7	0	5	0	0	3	0	0	5	6	59	2,81	-20,3	
J28																									
Wrinkles depth	6	4	3	4	7	3	5	2	5	1	5	6	0	3	3	7						64	4,00	-16,0	
Skin brightness	6	8	2	7	8	6	7	8	5	2	8	4	6	8	7	7						99	6,19	23,8	
Hydration	5	9	3	7	8	5	7	6	5	5	5	6	6	0	9	6						92	5,75	1,5	
Discomfort feeling	5	0	0	1	0	0	3	1	2	6	7	5	3	0	0	3						36	2,25	-21,3	
Redness	5	0	0	2	0	0	4	0	3	4	1	7	0	4	0	1						31	1,94	-45,0	

Average mark /10 given by the volunteers



APPENDIX XI

List of the persons who participated to the study fulfilment

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