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:
Study manager: Marie-Anne PEUCHOT; MSc.
Technicians: Emilie BOURREAU
Dermatologist: Marie CREST; MD

Tested products:

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

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It is made of 47 pages.

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. **Ra** (Arithmetic average of the profile roughness peaks with the total measuring lengths)
   2. **Rt** (Arithmetic average value of amplitudes of the 5 highest profile peaks and the 5 deepest profile valleys in the single measuring lengths).
   3. **Rz** (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.

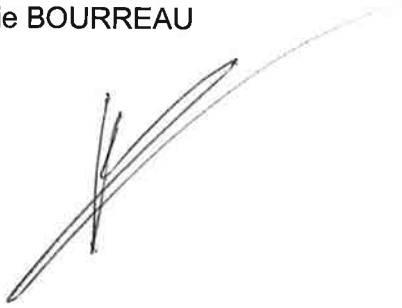
AUTHENTICITY OF THE RESULTS

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

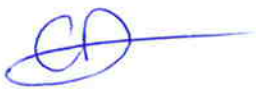
After rereading, I certify this information conform to the reality of the obtained results,

Investigator, Emilie BOURREAU



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

Quality Control Manager, Claire DULON



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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: approximately1000
- ✓ 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°C ± 2°C and 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°C ± 2°C and RH = 40% - 60%) during 30 minutes.