

COMPLETE AGING REPAIR NEEDS FIVE KEY DIMENSIONS TO RESTRUCTURE SKIN FACE: BIOLOGICAL & CLINICAL EVIDENCE

784

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INTRODUCTION

The aging multifactorial process affects the cellular metabolism and stimulates inflammation in the skin, damaging its different layers. [1] The epidermal barrier function is weakened, the dermo-epidermal junction is compromised, and the dermal extracellular matrix is impaired. [2] These phenomena are amplified by the decline in fundamental proteins called collagens playing structural roles and contributing to mechanical properties of all skin layers. [3] Results, the whole skin becomes thinner, leading to the appearance of aging signs - from the most easily corrected to the most challenging - such as altered texture, deep wrinkles, ptosis and sagging.

An effective strategy to combat skin aging is the development a cosmetic NIGHT BANDAGE CREAM formulated in an inverse emulsion with the highest concentration on the market of hydroxypropyl-tetrahydro-pyrantriol (produced using a green tech process).

MATERIALS & METHODS

1. Ex-vivo studies

- To demonstrate the “**skin penetration of the hydroxypropyl-tetrahydro-pyrantriol**”

=> “Normal” skin explants, untreated (T) & treated (P) by the NIGHT BANDAGE CREAM

- Raman spectroscopy analysis

- To highlight the global efficacy of the cosmetic NIGHT BANDAGE CREAM on “**5 key dimensions of skin repair**” (metabolism repair, inflammation relief, epidermal reconstruction, DEJ strengthening and dermal remodeling) and its capacity to “**stimulate different types of collagens**” in all skin layer

=> “Normal” and “post-laser” skin explants, untreated & treated by the NIGHT CREAM.

- Immunostaining & image analysis

2. Clinical study

- To prove the efficacy of the cosmetic NIGHT BANDAGE CREAM on “**aging signs**”

=> 47 Asian women, 47-65 y.o, with aging signs, during 2 months.

- Clinical scoring (Atlas [4] & score scales) D0, 1M & 2M
- AEVA-HE[®] system: fringe projection combined with stereometry D0, 1M & 2M
- LC-OCT: Line-field Confocal Optical Cohérence Tomography D0 & 2M
- Consumer test (84 Asian women) D0imm, D1 first wake-up, D15 & 1M
- TEWL with stripping (24 women) T0, T1h, T2h, T4h & T6h
- Derma Torque Meter (40 women) T0 & T4h

RESULTS

1. Ex-vivo studies

- “**Skin penetration of the hydroxypropyl-tetrahydro-pyrantriol**”

A **strong signal** of the molecule is detected very quickly as soon as **4h after application**, and **after 24h**:

- ✓ **Strong signal** in the **stratum corneum** at about 10-20µm
- ✓ **Clear signal** in the **epidermis** until 50µm
- ✓ **Moderate signal** between 50 and 70µm > reaching the **dermal-epidermal junction**
- ✓ **Molecule traces** until around 80µm > **papillary dermis** level

=> Formulation allows the hydroxypropyl-tetrahydro-pyrantriol to **penetrate faster, broader and deeper** than ever seen before for such ingredient.

- “**5 key dimensions of skin repair**” & “**skin collagens**”

Under basal condition:

METABOLISM REPAIR		INFLAMMATION RELIEF		EPIDERMAL RECONSTRUCTION		DEJ STRENGTHENING		DERMAL REMODELING	
T (CONTROL)	P (NIGHT CREAM)	T (CONTROL)	P (NIGHT CREAM)	T (CONTROL)	P (NIGHT CREAM)	T (CONTROL)	P (NIGHT CREAM)	T (CONTROL)	P (NIGHT CREAM)
ACONITASE 2 +84%** P vs T - 3.1 & 5.8 mean surface % of ACO2		INTERLEUKIN 1-alpha -43%** P vs T - 13.8 & 7.8 mean surface % of IL-1-alpha		SYNDECAN-1 +86%** P vs T - 6.2 & 11.5 mean surface % of SYNDECAN-1		PERLECAN +141%** P vs T - 29.6 & 71.2 mean surface % of PERLECAN		GAGs +44%** P vs T - 29.8 & 43.1 mean surface % of GAGs	

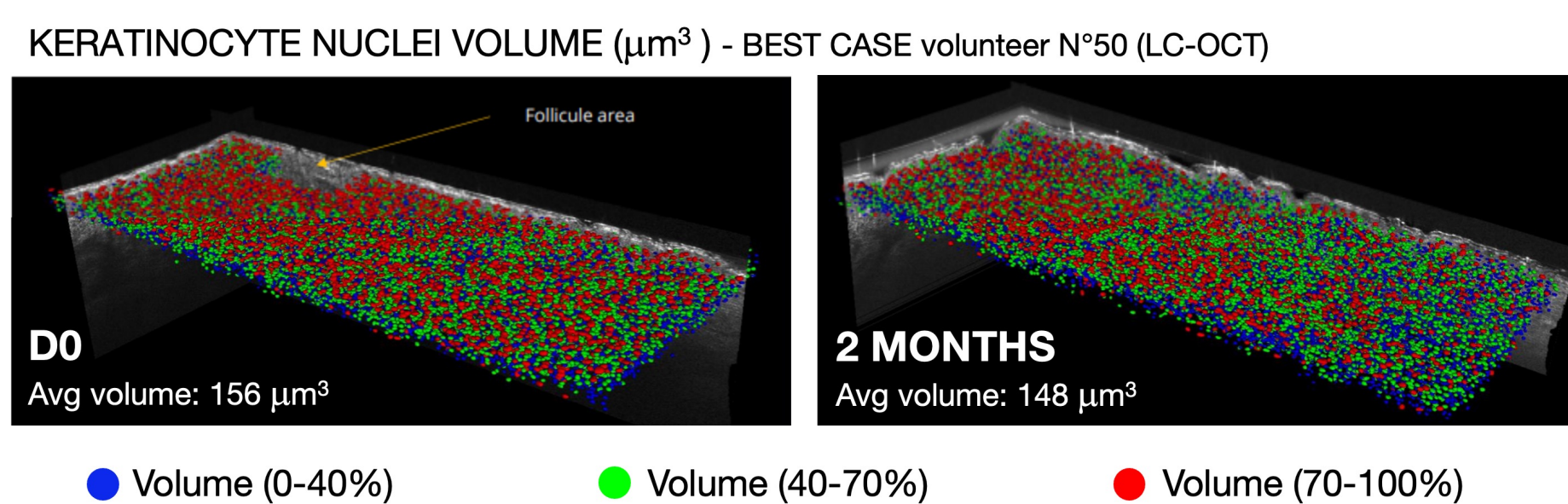
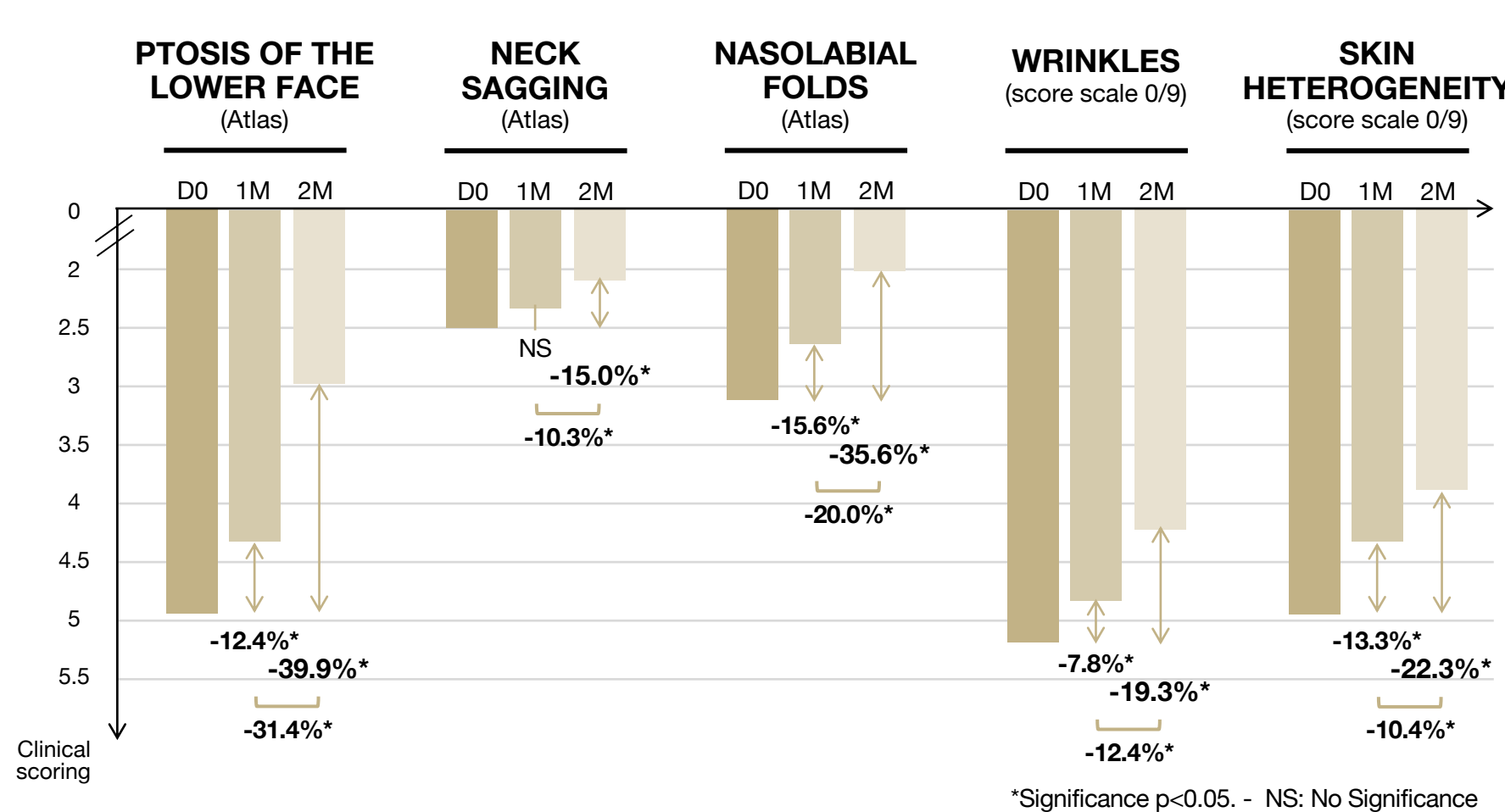
**significant with p<0.01

In post-laser conditions: all the previous markers evolve positively & dermal remodeling marker **FIBRONECTIN +26%** (LP vs L).

The cosmetic NIGHT BANDAGE CREAM induced the **synthesis of 13 of the 14 COLLAGENS identified in the skin**, i.e. **92% stimulation**. It acted in all skin layers, increasing the synthesis of collagens present in the **epidermis** (collagen XIII), **DEJ** (collagens IV, VII, XV & XVIII) and **dermis** (collagens I, III, V, VI, XI, XII, XIV & XVI).

The high concentration of xylose derivative revealed new advantages of this molecule, such as the **stimulation of acidic GAGs**, including the known, **hyaluronic acid**, by **+386%** under basal conditions and **+93%** in post-laser never stimulated with lower concentration in cream.

2. Clinical study



From the easiest to the deepest skin reconstruction targeting even the most stubborn signs of aging. The formula delivers high performance to **recover 22 aging scars**. From **instantly repairing**, **first night** bringing **radiance**, **2 weeks** tackle **bounciness**, **1 month** reducing **pores** and **wrinkles** and after **2 months** acting on **Nasolabial folds decrease: -35%**, **Contour facial ptosis decrease: -78mm³** and **Cheek tonicity: +37%**.

In addition, LC-OCT showing the skin as it was under a microscope demonstrates significant **decreases of the keratinocyte nuclei volume** and **atypia score** signing for a **rejuvenating effect**.

CONCLUSION

In conclusion, combined ex-vivo and clinical studies highlighted the **repairing & restructuring efficacies** of the cosmetic NIGHT BANDAGE CREAM, acting on “**5 key dimensions of skin repair**” and **stimulating 92% of “skin collagens”** to fight “**22 aging signs**” even the most stubborn.

These results are associated with the **highest concentration on the market of hydroxypropyl-tetrahydro-pyrantriol** in the cosmetic NIGHT BANDAGE CREAM, capable of **intensely penetrate the skin**, even its deepest layers, and **leverage the benefit of this molecule** never seen before thanks to the prowess of formulation.

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 [3] S. Ricard-Blum - The Collagen Family. *Cold Spring Harb Perspect Biol* 2011; 3: a004978
 [4] R. Bazin, F. Flament. Skin aging Atlas. Volume 2 Asian type. Ed Med Com. 2010.