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Use of a cream containing a post-biotic ingredient in optimizing wound healing and reducing post-inflammatory hyperpigmentation in skin of color : Clinical and patient-centered outcomes

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Introduction & Objectives

Skin of color is particularly prone to developing pigmentary alterations, notably post-inflammatory hyperpigmentation, even after superficial skin injuries [1,2]. In this population, the use of targeted dermo-cosmetic treatment is crucial to promote optimal wound repair while limiting dyschromia and preserving an aesthetically satisfying outcome. Beyond clinician-assessed and instrumentally measured efficacy, patient-perceived benefits and satisfaction are key elements to consider when evaluating such treatments. In this study, we evaluated a cream formulated with a post-biotic ingredient on superficial wounds induced by a standardized Er:YAG laser model, in comparison with an untreated control area, integrating both objective outcomes and patient-reported perceptions.

Materials & Methods

Population:

Healthy volunteers with skin phototype IV to VI were enrolled in this monocentric comparative clinical study.

Study design:

Standardized epidermal injuries was created under local anesthesia on the forearms (two 1 cm² lesions per subject) using an Er:YAG laser of 2940 nm. This device enables precise, stepwise ablation of cutaneous tissue while limiting residual thermal injury.

Assessments :

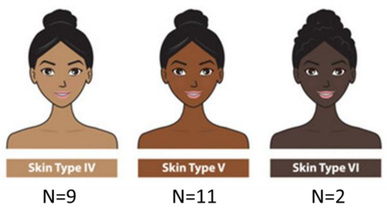
Clinical assessment : ✓ Wound repair dynamic ✓ Wound healing quality ✓ Post-inflammatory hyperpigmentation
Patient perception ✓ Perceived efficacy ✓ Cosmetic properties



One site treated with a cream containing a post-biotic ingredient - contralateral site untreated (control).

Results

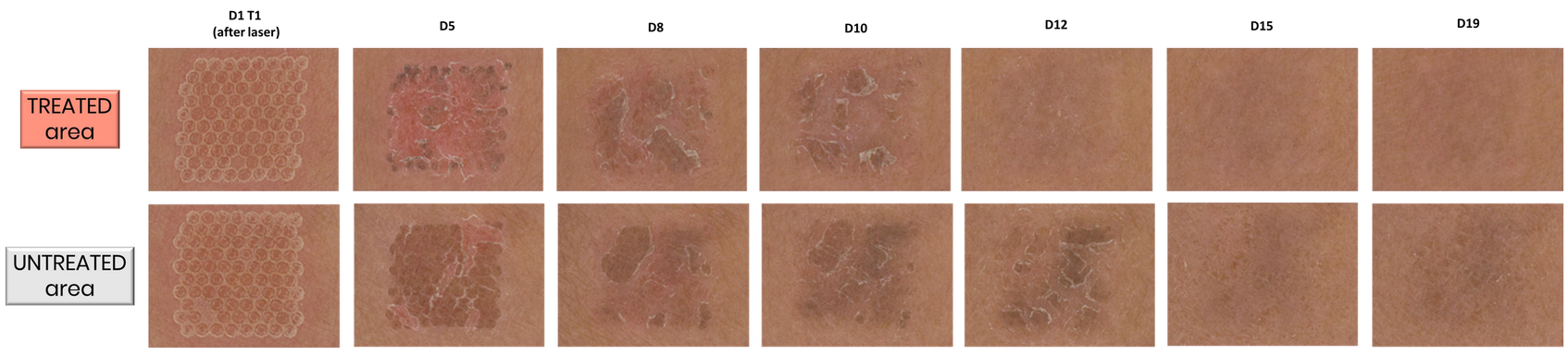
Twenty-two healthy volunteers aged 22 to 48 years with skin phototype IV to VI were included :



CLINICAL EVIDENCE

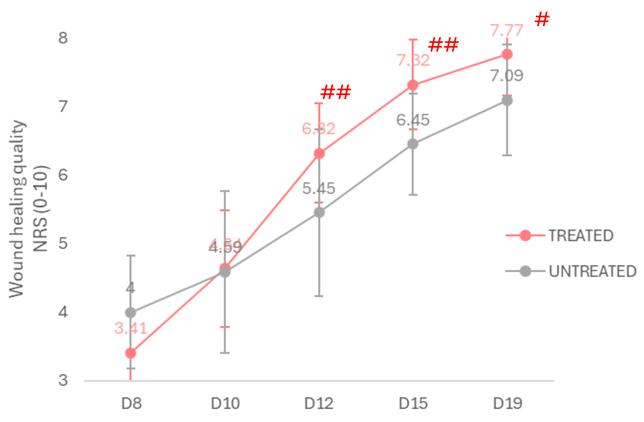
Repairing efficacy

Complete re-epithelialization was clinically assessed 3 days earlier on the treated side versus the untreated side (p = 0.0032) with a marked restoration of skin texture on the treated site, showing that the skin had recovered 97% of its texture homogeneity by day 19 (C Cube® imaging analysis).



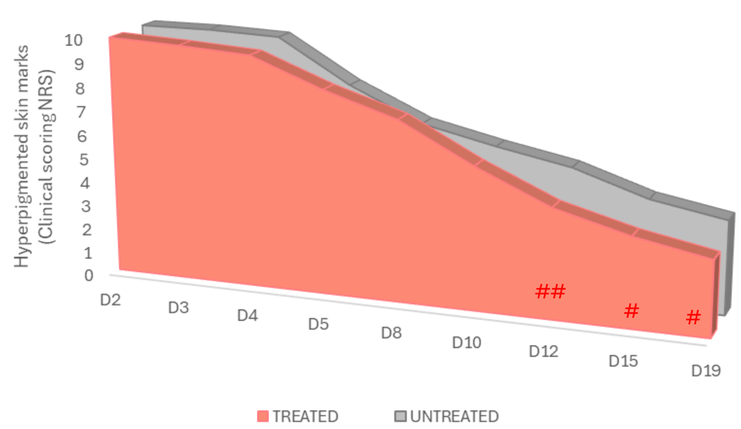
Wound healing quality

Wound healing quality was significantly superior on treated side from D12 (p = 0.0002) to the end of the study at D19 (p = 0.0031). This was associated with 97% texture homogeneity restored by D19.



Reduction of post-inflammatory hyperpigmentation (PIH)

PIH, clinically assessed, was significantly reduced on treated side at D12 (p = 0.0008), D15 (p = 0.0068), and D19 (p = 0.0041), reaching a 68.8% decrease at day 19.



(# p<0.05, ## p<0.001 vs Untreated ANOVA and ANCOVA test)

PATIENT-REPORTED PERCEPTIONS

Beyond clinician-based and instrumental assessments, efficacy was also strongly perceived by the patients.



Repairing effect
8,33 / 10



Ease of application
9 / 10



Pleasant sensation upon application
9,36 / 10

Conclusions

This study shows for the first time that a cream containing a post-biotic ingredient significantly **accelerates and improves quality of superficial wound repair in skin of color**, while **reducing post-inflammatory hyperpigmentation**. Objective clinical and imaging data were consistent with high patient-perceived efficacy and excellent cosmetic acceptability.

These findings support its use as an effective dermo-cosmetic product to optimize aesthetic outcomes after superficial skin injuries in skin of color and improve their quality of life.

References

[1] Alchorne MMA at al. Dermatology in black skin. An Bras Dermatol. 2024 May-Jun;99(3): 327-341.

[2] Markiewicz E et al. Post-Inflammatory Hyperpigmentation in Dark Skin: Molecular Mechanism and Skincare Implications. Clin Cosmet Investig Dermatol. 2022 Nov 25;15: 2555-2565

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