

EVALUATION OF THE EFFICACY OF A NEW DERMO-COSMETIC PRODUCT CONTAINING *SILYBUM MARIANUM* FRUIT EXTRACT AND NIACINAMIDE IN YOUNG ACNE ADULTS: FOCUS ON ACNE LIPID PROFILE

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INTRODUCTION

Acne vulgaris is a common inflammatory dermatological condition with a multifactorial etiology, primarily affecting adolescents and young adults, characterized by the presence of comedones, papules, pustules and in severe cases, cysts and nodules. Dermocosmetic products play a well-established role in managing mild to moderate acne or used in association of medical treatment.

In the present study, we evaluated the benefit of an optimized anti-acne formula containing both *Silybum marianum* fruit extract (SMFE) and niacinamide in restoring of a healthy skin lipid profile assessed by epidermal non-invasive methods.

MATERIALS AND METHODS

Study

14 adults aged 18-30 years presenting with mild to moderate facial acne according to Global Evaluation Acne (GEA) scale with 15 to 50 total acne lesions on the face (excluding the nose area) with at least 6 inflammatory lesions in the target areas, were consented and enrolled in a 29 days study. Split-face clinical study, comparing the efficacy of the optimized product formula containing niacinamide in comparison to the regular formula. Both formulas contained SMFE.

Application twice a day of each products on hemi-face

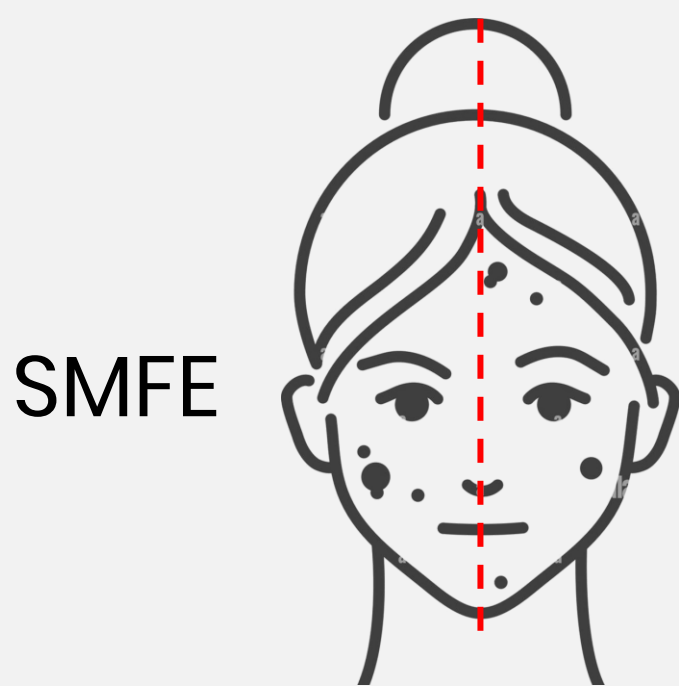
D1

D8

D15

D29

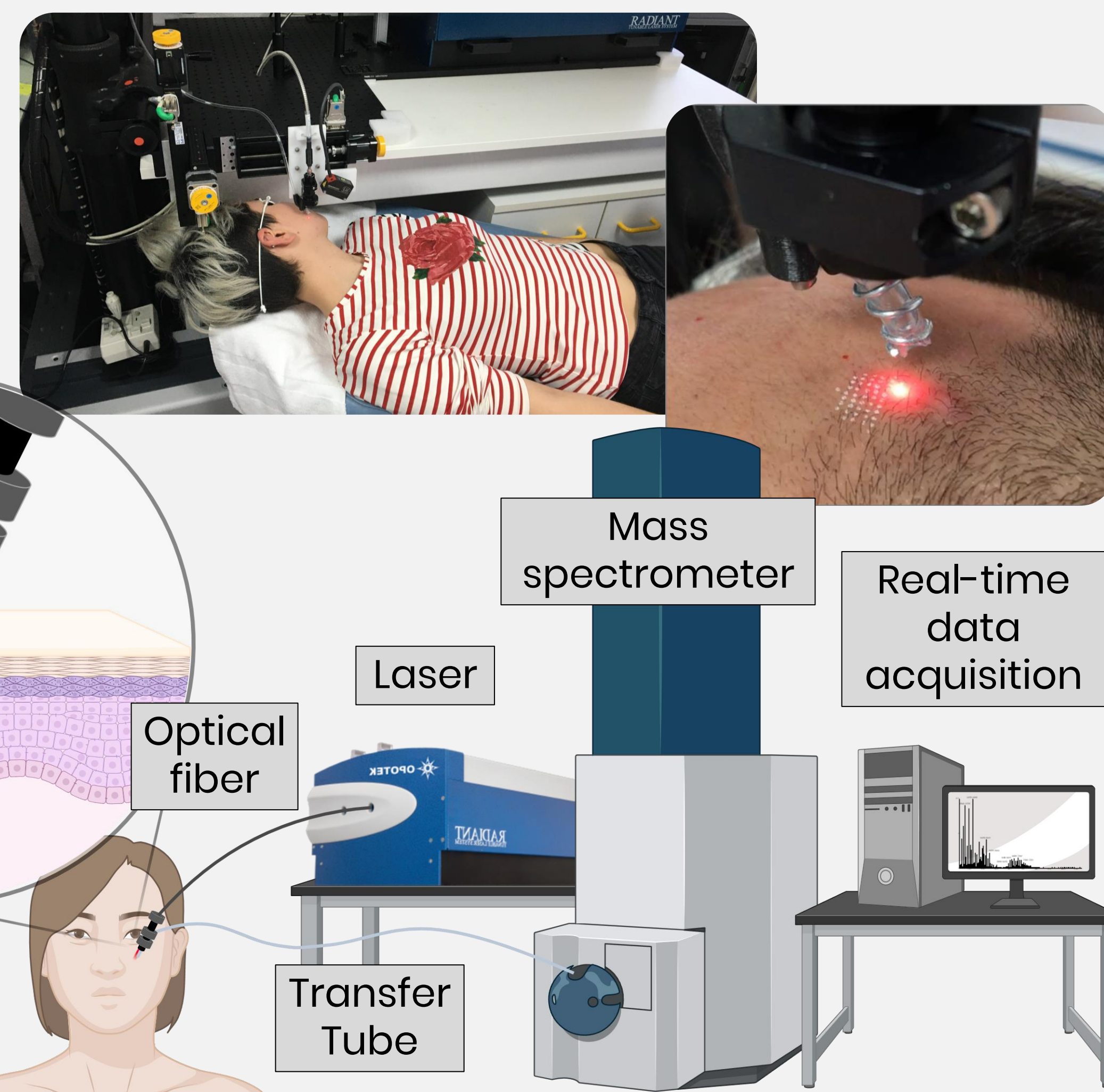
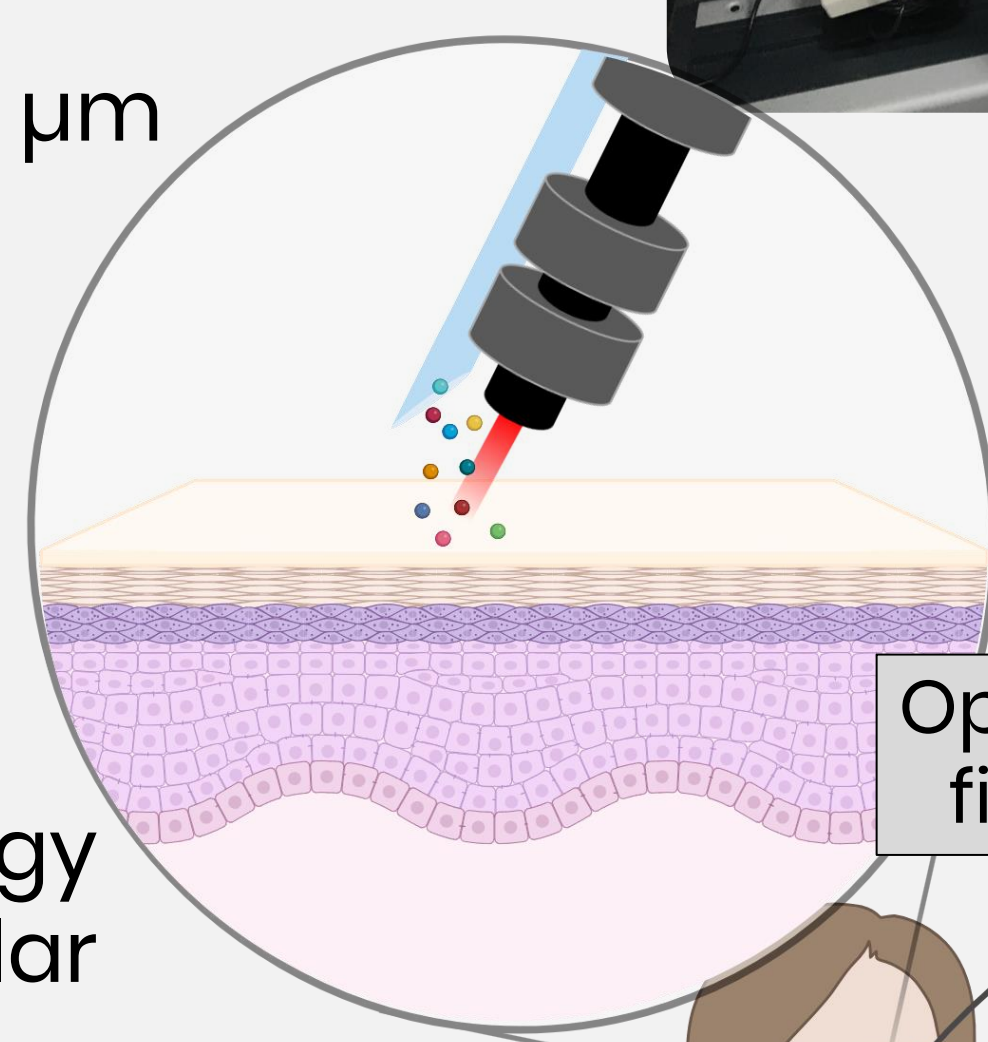
Assessments on each visit : > *In-vivo* SpiderMass measurement and FTIR Spectroscopy



SMFE
+
Niacinamide

SpiderMass®

- Nanosecond ablative fibered laser tuned at 2.94 μm → excitation of the absorption bands of O-H bonds present in water molecules
- The molecules desorbed by the laser beam are aspirated and transported to the mass spectrometer by a polymer tube, positioned just above the tissue being analyzed.
- In dermatology and cosmetology this technology enables the analysis of skin molecular composition.

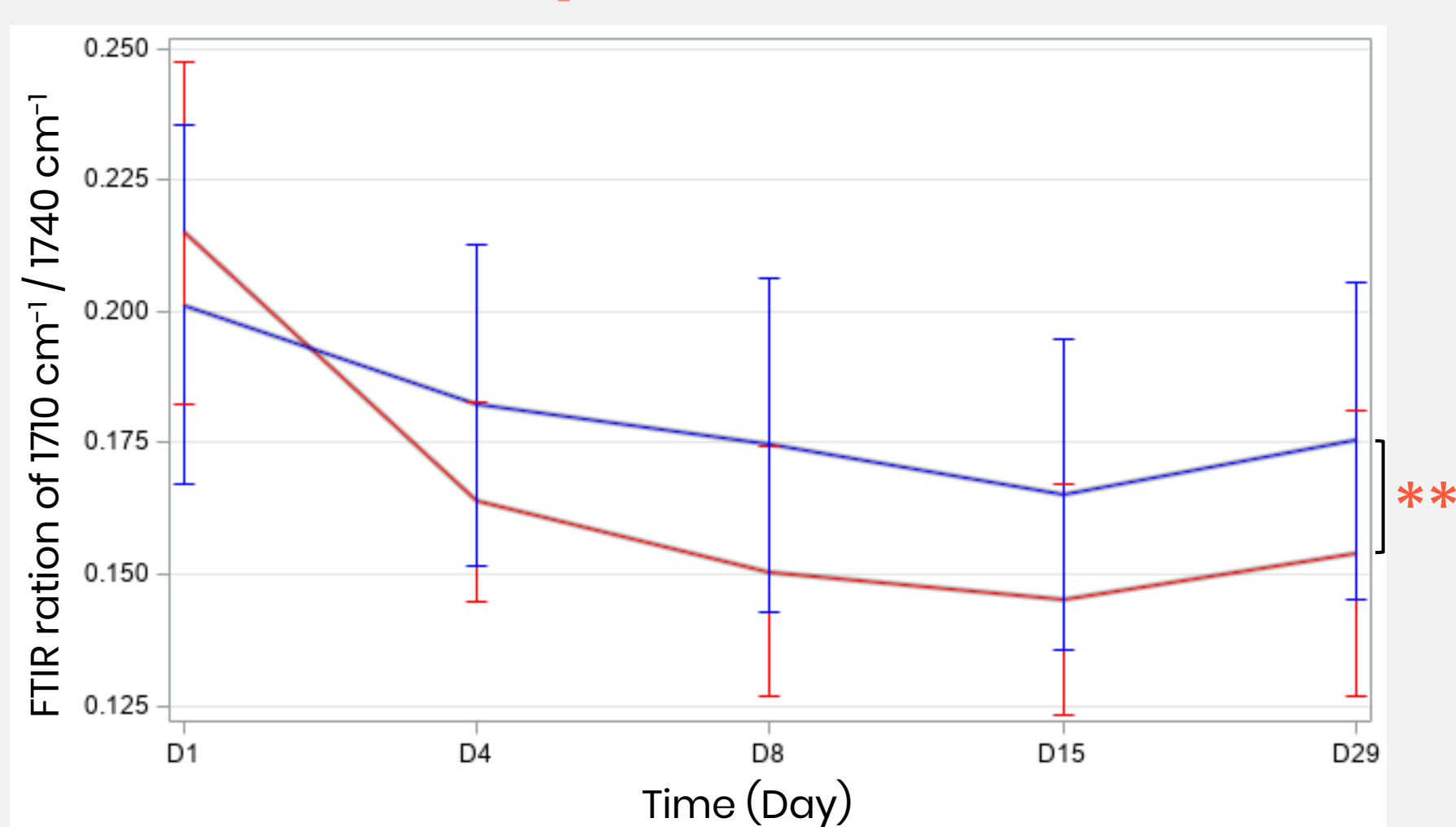


FTIR Spectroscopy

Free Fatty Acid (FFAs)/Triglycerides (TGs) ratio (FFAs; 1710 cm^{-1}) and TGs (1740 cm^{-1}) was calculated and used as an indicator of microbiotic lipase activity and thus sebum quality.

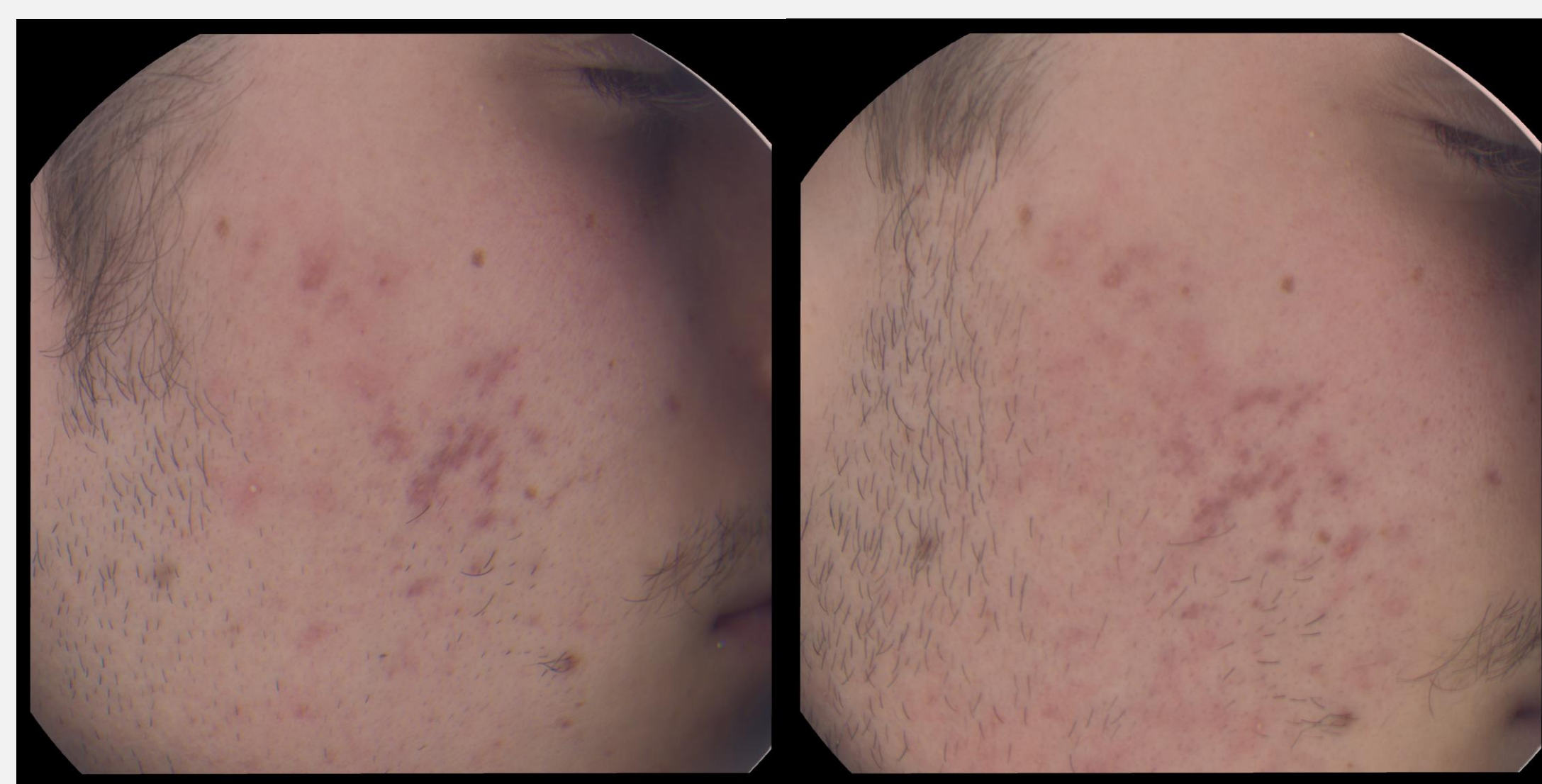
RESULTS

FFA / TG FTIR ratio



- Formula containing both SMFE and niacinamide
- Formula containing only SMFE

- Decrease of the **FFA / TG ratio**
- New formula X3 more active (comparing efficacies between day 1 and day 29)

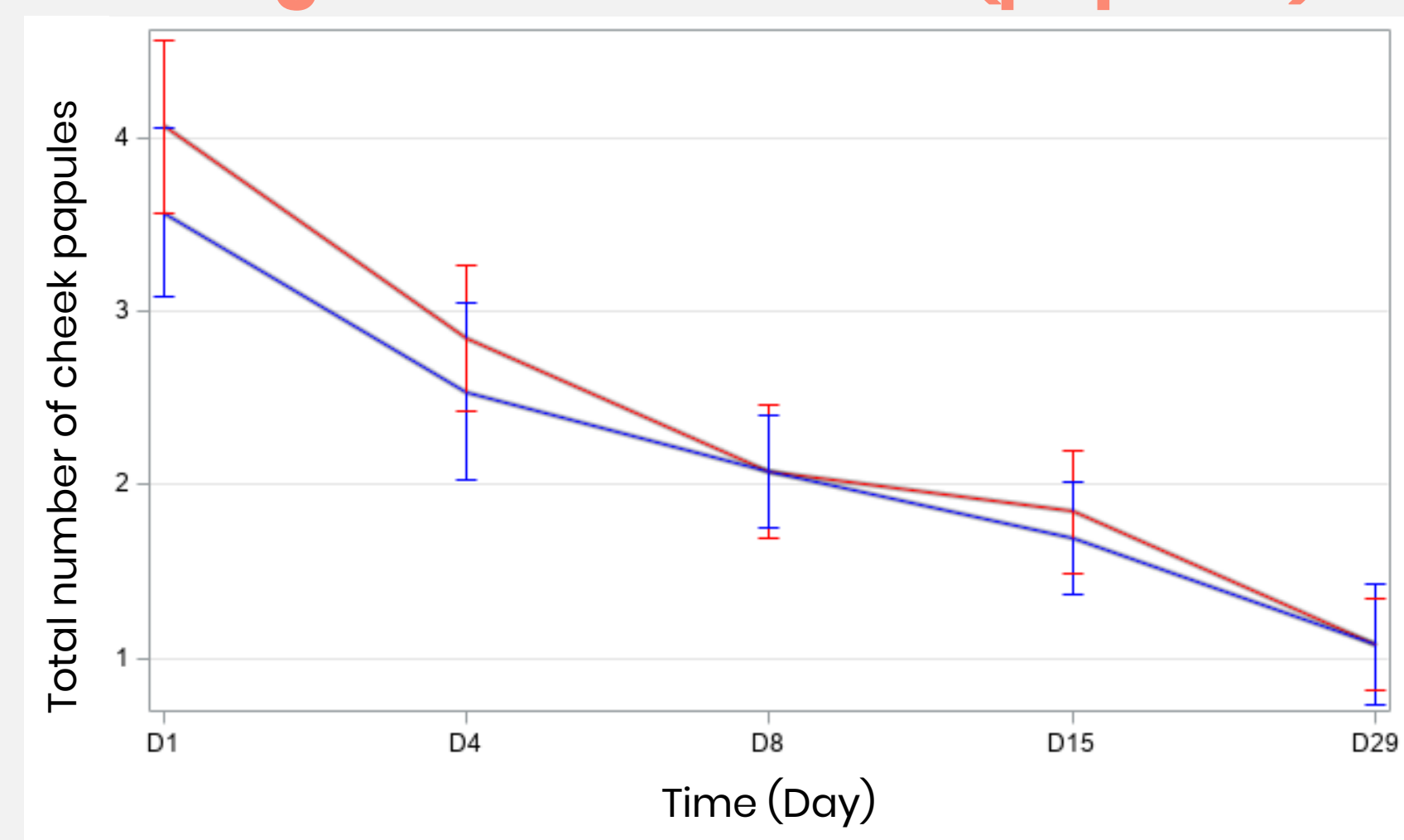


D1

D29

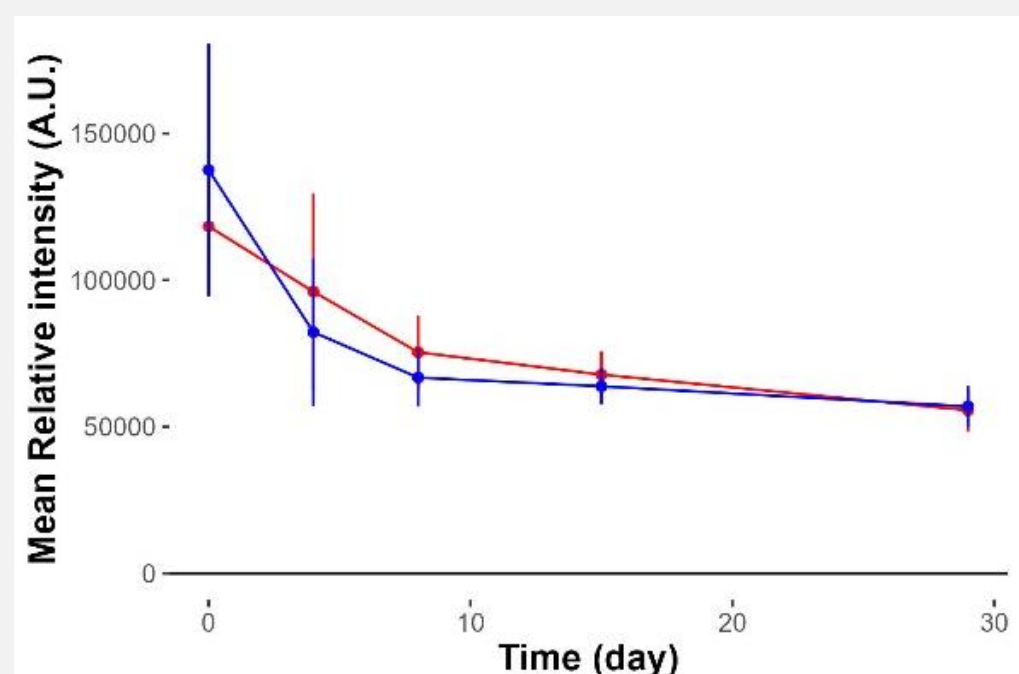
- Lighter spots and number of papules are significantly decreased ($p\text{-value} \leq 0.05$) compared to D1 (before application) on treated face (S08)

Investigator Lesion Count (papules)



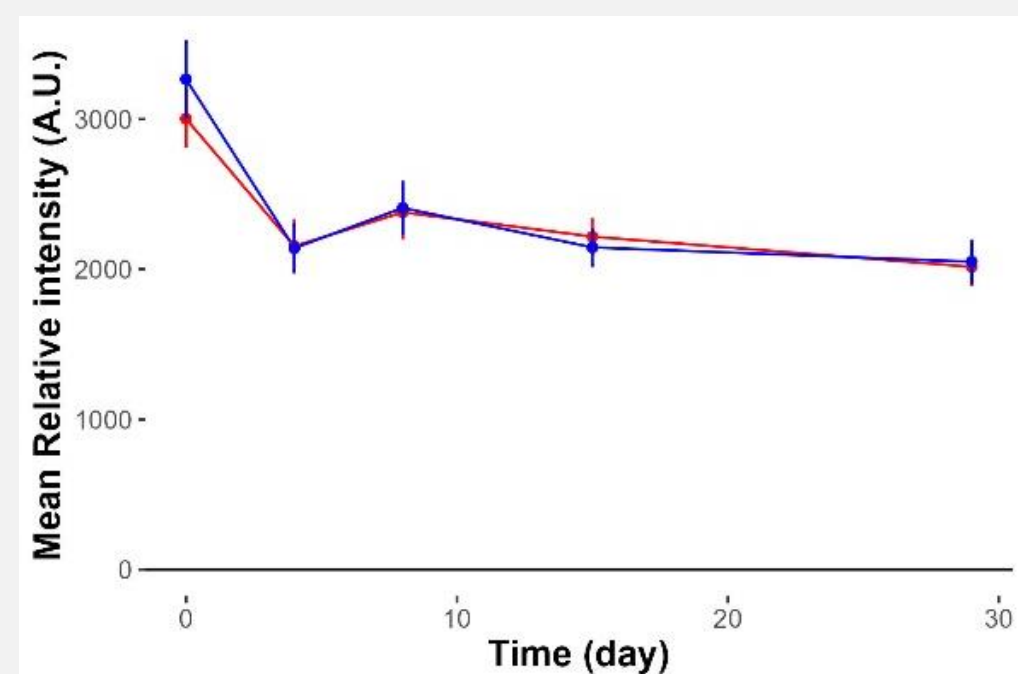
- Formula containing both SMFE and niacinamide
- Formula containing only SMFE

Palmitic Acid



- Formula containing both SMFE and niacinamide

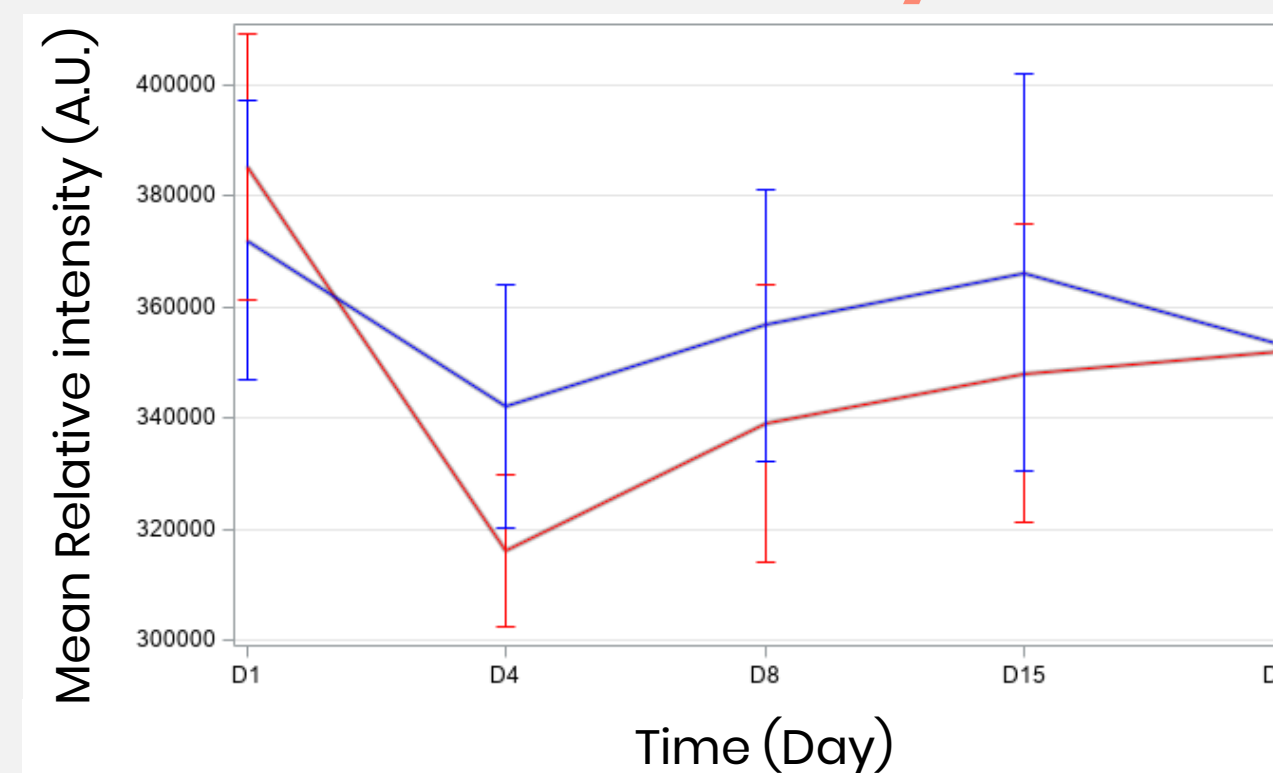
Arachidonic Acid



- Formula containing both SMFE and niacinamide
- Formula containing only SMFE

- Decrease in pro-inflammatory fatty acids (palmitic acid and arachidonic acid) between day 1 and other day. But no significant differences between the formulas.

Unsaturated Fatty Acids



- Formula containing both SMFE and niacinamide

- Significantly greater decrease evolution in unsaturated fatty acids for the formula with Niacinamide ($p\text{-value}=0.02$)

CONCLUSION

This comparative randomised clinical study demonstrated that this new dermocosmetic face care, containing *Silybum marianum* fruit extract and niacinamide, is well tolerated and provides significant benefits in mild to moderate acne-prone skin by restoring a healthier skin lipid profile, characterized by a lower FFA/TG ratio; a lower unsaturated lipid content and by improving acne lesions count within the first month of daily use.