2-MERCAPTONICOTINOYL GLYCINE: A NEW MOLECULE THAT PREVENTS AND DECREASES UV-INDUCED PIGMENTATION.

EVALUATION OF PIGMENTATION CHANGES THROUGH DOUBLE-BLIND, VEHICLE CONTROL PROTOCOLS AND COMPARISON *VERSUS* ANTI-PIGMENTATION STANDARDS.

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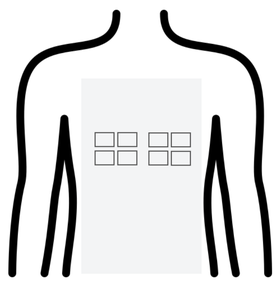
1 INTRODUCTION

Hyperpigmentation disorders are a frequent reason for dermatology consultations as they can impair quality of life. The most frequent disorders are melasma, post-inflammatory hyperpigmentation and solar lentigos with increased melanin content on top of other pathophysiologic features. The development of a key and safe ingredient to manage facial skin tone heterogeneities is of great importance. The objective of this study was to evaluate the anti-pigmentation efficacy of 2-MNG in preventing UV-induced pigmentation in phototype III skin.

2 MATERIALS & METHODS

Fourteen studies were conducted in women (between 20-50 years old) in Shanghai (China), Paris (France) and Bucharest (Romania). For each study, 30 volunteers phototype III were recruited. Several products were applied (4 mg/cm2) on mini zones of the back, in a randomized and blinded protocol, five days a week for six weeks.

During the second week, volunteers were exposed under MED of UV-daylight during 4 consecutive days. The value under MED was adjusted depending on ethnic origin (varying from 0.5 for Chinese subjects to 0.75 for European).



Assessments were performed using Chromameter and scales for pigmentation and erythema. All studies were conducted in exactly same conditions and validated with Ascorbic acid 7% standard pivot. A Bayesian network meta-analysis established a large comparison of 2-MNG 0.5% anti-pigmentation performance *versus* 15 recognized actives (Kojic acid, Phenylethyl Resorcinol, Resveratrol, Ascorbyl glucoside, 4-butyl-resorcinol, Tranexamic acid, Niacinamide...).

In one Chinese study 2-MNG at 0.5 and 1% + associations at 0.5% with LHA (0.3%), and with Mexoryl SX (1.5%) were tested *versus* their vehicle and using Ascorbic acid 7% as reference.

Global IRB for this meta-analysis study: SHCPCH200706566, occurring the 30th June 2020, in Shanghai, China.

3 RESULTS & DISCUSSION

(i) 2-MNG 0.5% showed a significant anti-pigmentation efficacy versus vehicle.

(ii) 2-MNG 0.5% in all associations has significant anti-pigmentation efficacy than 2-MNG 0.5% alone.

(iii) All tests were validated with proven efficacy of Ascorbic acid 7% when compared to its vehicle.

(iiii) Meta-analysis showed that 2-MNG 0.5% provide statistically superior anti-pigmentation performance compared to all selected standards.

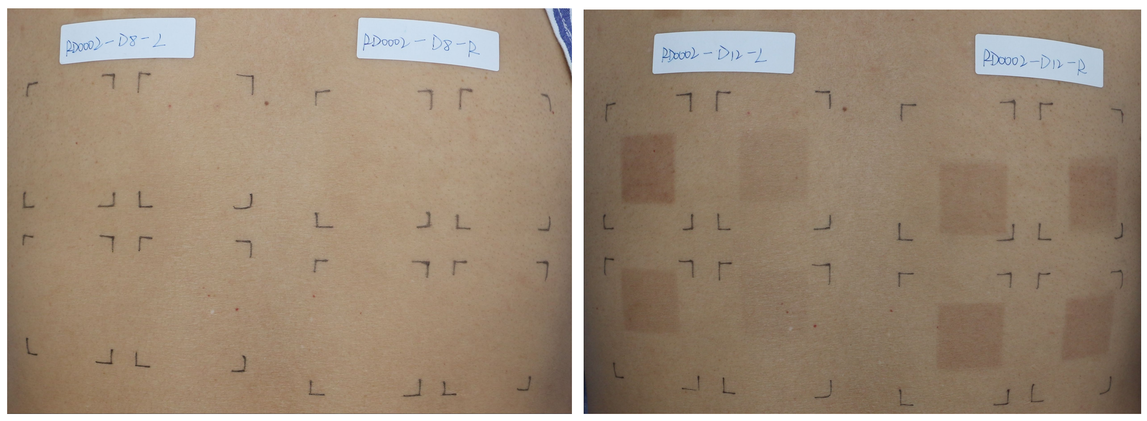
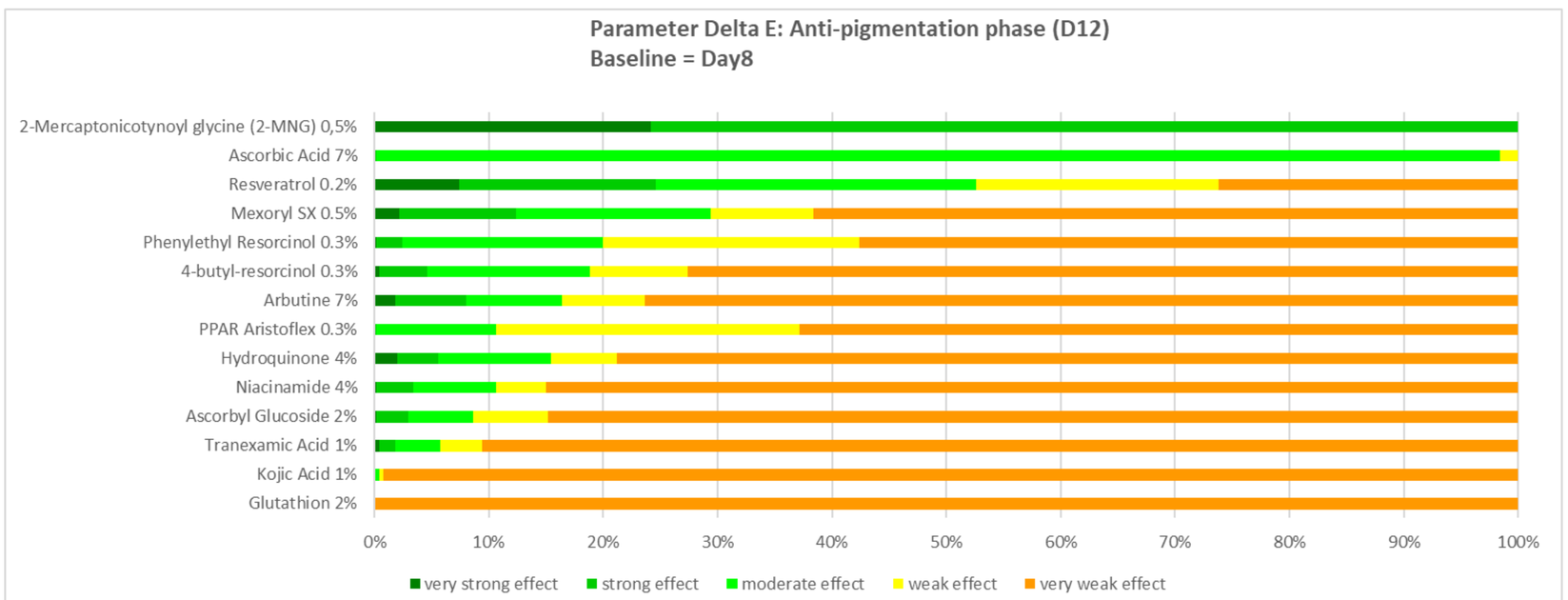


Figure 2: Example of subject's back at D8 and D12



Interpretation	Value of ΔE
Very strong	< -2
Strong	[-2; -1.2]
Moderate	[-1.2; -0.7]
Weak	[-0.7; -0.5]
Very weak	≥ -0.5

Figure 1: Anti-pigmentation performance of 2-MNG 0.5% and of 13 recognized actives at Day 12.
Day 8 was considered the baseline. Green : moderate to very strong anti-pigmentary effect.

4 CONCLUSIONS

This new ingredient delivers a very high efficacy *versus* recognized active ingredients from the market. It becomes a promising approach to develop dermo-cosmetic products targeting main hyperpigmentation concerns of women and men worldwide.

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