2-MNG (*2-MERCAPTONICOTINOYL GLYCINE*) PREVENTS UV-INDUCED SKIN DARKENING AND DELAYED TANNING

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1 INTRODUCTION

Non-extreme chronic sun exposure induces skin pigmentation via two distinct mechanisms: an immediate darkening resulting from the oxidation of pre-existing melanin or its precursors; followed by a delayed tanning resulting from a new synthesis of melanin. 2-mercaptonicotinoyl glycine (2-MNG) has been revealed in vitro as a new molecule, offering high potential for the management of pigmentation[1]. Its effectiveness was explained by its ability to form adducts with certain precursors of melanin[2]. Melanin precursors being involved in both immediate darkening and delayed tanning, we verified in vivo the efficacy of 2-MNG to prevent these two mechanisms following UV exposure.

2 MATERIALS & METHODS

Objective: Controlled clinical trial to assess in vivo performance on melanin rich skin, defined by ITA° classification, to prevent melanin oxidation, as well as to reduce neo-melanin production under UV-daylight exposure.

Materials & Methods: 33 female and male, aged 18 to 50 years with phototypes III/IV/V (-01° ≤ ITA° ≤ 28°) were treated on mini-zones on the back, five days a week during seven weeks, at a dose of 4mg/cm². During the second week, volunteers were exposed under 0.5 MED of UV-daylight during 4 consecutives days (*ref* table). 2-MNG at 0.5 & 1% alone and 2-MNG 0.5% in association with LHA (0.3%), and Mexoryl-SX (1.5%) were tested versus vehicles and versus positive references Kopcinol at 2.5%. Evaluation criteria were performed using Chromameter measurements (*delta E, ITA° and erythema a* value*), and clinical assessment (*skin pigmentation and erythema scales*)

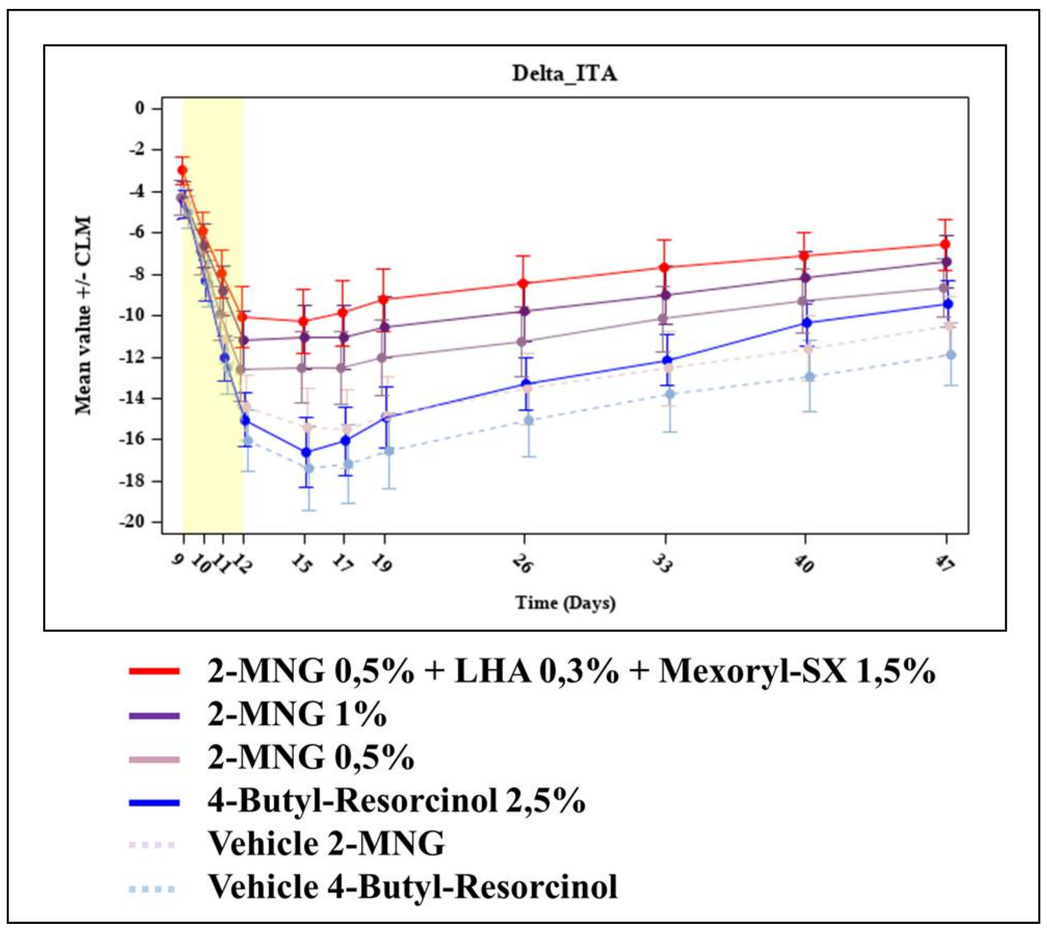
	Week 1					Week 2					Week 3					Week 4, 5 & 6					Week 7					
Day	1	2	3	4	5	8	9	10	11	12	15	16	17	18	19	D22 to D26					43	44	45	46	47
Treatment	Twice a day					Thrice a day					Twice a day					Once daily					Once daily				*
UV exposure						x	x	x	x																
Assessments	x					x	x	x	x	x	x			x				X**							x

* No treatment at D47

**Assessments on Fridays (D26, D33 and D40)

3 RESULTS & DISCUSSION

- 2-MNG prevent significantly immediate darkening and inhibited new melanin production versus vehicle, with higher performance at 1% than at 0.5%.
- 2-MNG 0.5 and 1% led to a significantly better performance against UV-induced pigmentation than 2.5% Kopcinol.
- 2-MNG (0.5%) in association with LHA (0.3%), and Mexoryl-SX (1.5%) had significant higher performance against UV-induced pigmentation than 2-MNG 0.5% alone.
- No side effects were reported all along the clinical trial.



4 CONCLUSIONS

2-MNG efficient dose effect (0.5 and 1%) has been revealed on the two skin pigmentation mechanisms induced by UV exposures. It has also been observed that the association with LHA and Mexoryl enhances its efficacy. It can therefore be formulated to provide efficacy on melanin rich skin pigmentation.

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