ENLARGED PHOTOPROTECTION EFFICIENTLY COVERING THE WHOLE UV SPECTRUM: EVALUATION OF 2 MONTH-CLINICAL CHANGES IN PIGMENTATION AND WRINKLES VISIBILITY THROUGH A REAL LIFE SPLIT-FACE STUDY IN DIFFERENT PHOTOTYPES FROM BRAZIL AND CHINA

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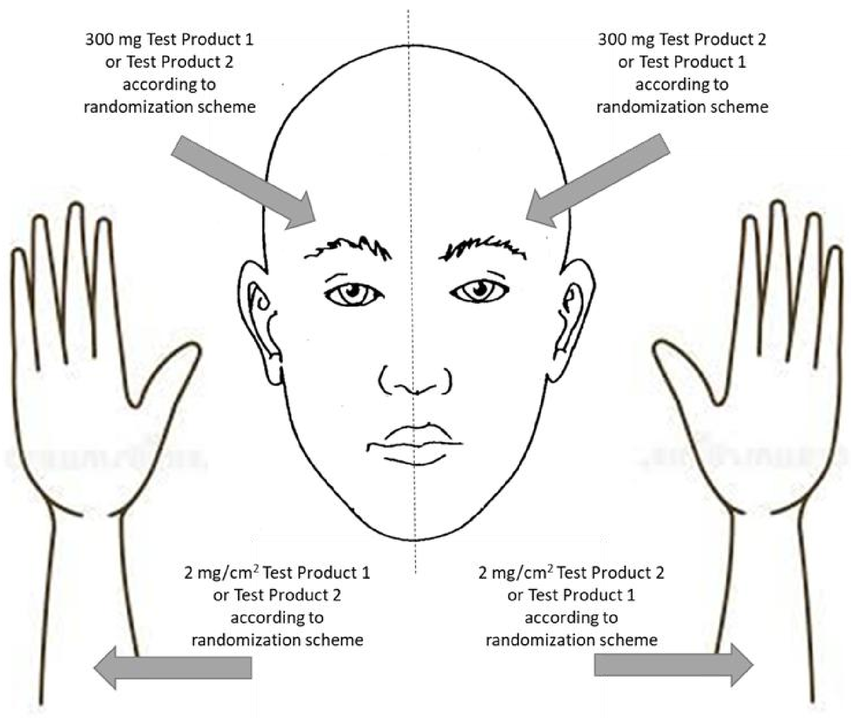
1 INTRODUCTION & OBJECTIVES

Today, state-of-the-art sunscreen formulas can efficiently filter UV wavelengths up to 370/380 nm but have limited absorption in the 370/380–400 nm range of wavelengths. Recently, a new cyclic merocyanine UVA1 absorber, Methoxypropylamino Cyclohexenylidene Ethoxyethylcyanoacetate (MCE), exhibiting a maximal peak of absorption at 385 nm was approved by the Scientific Committee on Consumer Safety (SCSS) for use in sunscreen products. This study was to evaluate in vivo global anti-aging benefits of a higher and broader UVA1 protection with the daily application of a sunscreen formulation enriched with MCE in Brazilian and Chinese populations.

2 MATERIALS & METHODS

This double-blind, split half-face clinical study was conducted during summer season with healthy female volunteers (30–65y) in Brazil (52 volunteers, phototypes II-III) and China (61, phototypes III-IV). After 2 weeks of wash-out, a sunscreen with 3% MCE (SPF 50+) and a reference sunscreen (SPF 50+ without MCE) were applied twice-daily with controlled applications for two months, with the reference SPF50 containing MCE being applied on one half face and one forearm and the same reference product without MCE applied on the other half face and forearm (Figure 1), thus allowing intra-individual comparisons.

Figure 1: Test product applications to the test areas (300 mg to a half face and 2 mg/cm2 on forearm areas)



Volunteers were sun-exposed up to two hours daily and had standard pictures acquisition. Dermatologists graded the pictures at baseline and after two months of treatment based on reference standardized scales of Skin Aging Atlas.

3 RESULTS & DISCUSSION

Clinical assessment on pictures showed that after two months, the MCE-enriched sunscreen significantly ($p<0.05$) improved aging signs when compared to the reference formula with respect to both wrinkles/skin texture (Table 1) and pigmentation (Table 2), specifically:

i. Wrinkles/texture in Brazil (Forehead, Crow's feet, upper-lip or Nasolabial) and China (Upper-lip, Texture of mouth, Nasolabial)

Table 1: Expert panel assessment of test products for wrinkle and skin texture severity score changes obtained after 8 weeks of treatment

	China			Brazil		
	Reference SPF50 with MCE (W8-W0) Mean±SEM	Reference without MCE (W8-W0) Mean±SEM	Statistical significance	Reference SPF50 with MCE (W8-W0) Mean±SEM	Reference without MCE (W8-W0) Mean±SEM	Statistical significance
Forehead wrinkles	-0.06±0.04	0.03±0.05	ns (p=0.1222)	-0.09±0.09	0.01±0.10	**s (p=0.002)**
Crow's feet wrinkles	-0.04±0.04	0.02±0.04	ns (p=0.2154)	-0.23±0.13	-0.02±0.12	**s (p<0.0001)**
Nasolabial Fold	-0.05±0.03	0.10±0.03	**s (p=0.0002)**	-0.19±0.22	0.03±0.21	**s (p=0.003)**
Upper lip wrinkles	0.02±0.03	0.27±0.03	**s (p<0.0001)**	-0.27±0.11	-0.15±0.11	**s (p=0.001)**
Texture of mouth contour /Upper lip texture	-0.02±0.02	0.13±0.02	**s (p<0.0001)**	0.07±0.13	0.04±0.09	ns (p=0.232)
Cheek folds	n/d	n/d	n/d	-0.07±0.08	-0,06±0.13	ns (p=0.870)

W8 = Week 8; W0 = Week 0; SEM = standard error of the mean; s = statistically significant; ns = not statistically significant; n/d = not determined

ii. Pigmentation signs in Brazil (Whole face pigmentation and density of dark spots) and China (Contrast and Size of dark spots, Malar pigmentation, Whole face pigmentation)

Table 2: Expert panel assessment of test products for pigmentation severity score changes obtained after 8 weeks of treatment

	China			Brazil		
	Reference SPF50 with MCE (W8-W0) Mean±SEM	Reference without MCE (W8-W0) Mean±SEM	Statistical significance	Reference SPF50 with MCE (W8-W0) Mean±SEM	Reference without MCE (W8-W0) Mean±SEM	Statistical significance
Malar pigmentation	0.14±0.04	0.32±0.04	**s (p=0.0001)**	0.10±0.11	0.12±0.11	ns (p=0.727)
Whole face pigmentation	0.00±0.04	0.16±0.04	**s (p=0.0013)**	-0.12±0.10	-0.02±0.11	**s (p=0.002)**
Lower face density of pigmentary spots	n/d	n/d	n/d	-0.09±0.12	0.18±0.12	**s (p<0.0001)**
Contrast of selected pigmentary spots	0.04±0.04	0.33±0.04	**s (p<0,0001)**	0.06±0.14	0.04±0.15	ns (p=0.661)
Size of selected pigmentary spots	0.00±0.03	0.08±0.03	**s (p=0.047)**	-0.10±0.09	-0.11±0.10	ns (p=0.887)

W8 = Week 8; W0 = Week 0; SEM = standard error of the mean; s = statistically significant; ns = not statistically significant; n/d = not determined

4 CONCLUSIONS

For the first time, in real-life conditions, a broad spectrum photoprotection including long-UVA, demonstrated an extra-efficacy in the prevention and correction of facial skin aging signs of Brazilian and Chinese women.

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