

EX-VIVO DEMONSTRATION OF THE DE-PIGMENTING EFFECT OF NIACINAMIDE AND C-XYLOSIDE COMBINATION AND IN VIVO DEMONSTRATION OF ANTI-SPOT EFFICACY OF A SKIN CARE CONTAINING THIS ASSOCIATION

Fagot D.⁽¹⁾ • Verdier M.P.⁽¹⁾ • Pena A.M.⁽¹⁾ • Bossant I.⁽²⁾ • Eyraud S.⁽²⁾ • Renault B.⁽²⁾ • Jacquin J.⁽²⁾ • Gaudinat M.H.⁽³⁾ • Bouhadana E.⁽³⁾

⁽¹⁾ L'Oréal Research & Innovation, Aulnay-sous-Bois, France.
⁽²⁾ L'Oréal Research & Innovation, Chevilly-Larue, France.
⁽³⁾ L'Oréal Paris, Clichy, France.

BACKGROUND AND OBJECTIVE

Niacinamide has whitening activity by inhibiting free radicals, limiting inflammatory messages and melanin transfer to the keratinocytes and neutralizing melanin production (anti-tyrosinase activity). C-Xyloside, a sugar derivative can modulate pigmentation by dermis action. The association of the both ingredients can be relevant in a anti-spot cosmetic product. The aim of these studies was first to assess ex-vivo the de-pigmenting effect of the association Niacinamide + C-Xyloside, then to evaluate, in vivo, the efficacy of a daily skin care containing this association.

METHODS

1 2 ex-vivo studies were conducted on the association Niacinamide + C-Xyloside

• **Study 1:** The objective is to assess ex-vivo the de-pigmenting effect of the association 3.5% Niacinamide + 3% C-Xyloside by quantifying the level of melanin before and after treatment.

Skin explants have been daily treated with the association during 10 days. Other ones did not received any treatment (control).

After Formolin fixation, paraffin inclusion and Fontana Masson labeling, a quantitative analysis of number of pigmented cells has been done by optical microscopy (X40) according to this nomenclature.

- Score 1: non pigmented cells
- Score 2: moderate pigmented cells
- Score 3: very pigmented cells

The results were expressed in percentage of cells belonging to each category.

• **Study 2:** A visualization of epidermal distribution of melanin by Bi-Photonic Microscopy Technic (virtual biopsy) on skin explants treated during 10 days with the association versus control.

2 1 Clinical study under dermatologist supervision

The objective was to assess the anti-spot efficacy of a skin care product containing the association 3.5% Niacinamide + 3% C-Xyloside.

The panel was composed of 40 Caucasian women, 50 % of them having a sensitive skin, having solar lentigines and aged from 45 to 65 Y.O.

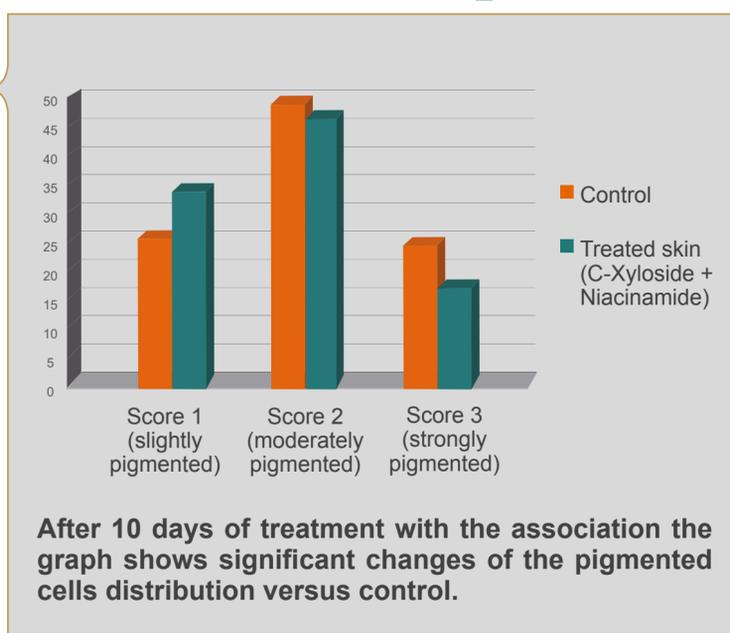
They applied every morning a SPF 25 cream containing the association during 8 weeks.



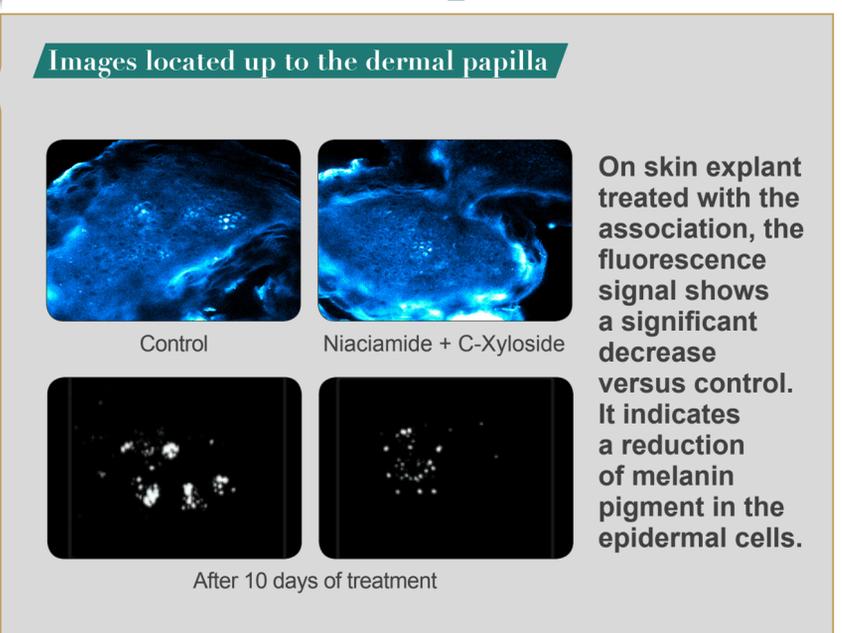
Evaluations of characteristic parameters of pigmented spot were done at T0 (baseline, before treatment) at T4 and T8 weeks using a Color Chart in 63 points.

RESULTS

1 COUNTING PIGMENTED CELLS



2 BI-PHOTONIC MICROSCOPY



3 CLINICAL STUDY AFTER 8 WEEKS

8 weeks of daily usage

In a clinical study after 8 weeks of daily usage with cream SPF25 containing the association Niacinamide and C-Xyloside.

		T + 4 weeks	T + 8 weeks
% of spots evolution	Lighness	-14% (s)	-13% (S)
	Size	-3.4% (S)	-3.4% (S)
% of evolution of the spots vs the skin	Constat spot/skin	-30 (S)	-34% (s)

The results show an improvement of the contrast spot/skin, the reduction of the size of spots and their clarification.

CONCLUSION & LIMITATIONS

These ex-vivo studies demonstrated respectively the interest of the association of Niacinamide + C-Xyloside to modulate melanin production and its distribution inside epidermal cells.

A study conducted on a product containing this association shows the reduction of the spot intensity, spot size and contrast spot/skin after 8 weeks of treatment.

The authors declare no conflict of interest