Care Creations™

Radianskin™

by **Beauty Creations**

The dark spots eraser

BASF

The Chemical Company

Radianskin™

Skin is safely evened and protected from pigmentary disorders in 14 days

Consequence of inflammatory reactions caused by pollution or sun damage for instance, the accumulation of melanin leads to the development of age spots on the face and hands in particular.

For most of women, dark spots are the most visible signs of aging; in that respect, quest for beautiful skin starts with an even, unified and radiant complexion.

To meet this consumer need, the Beauty Creations teams have used their expertise in skin pigmentation mechanisms to develop Radianskin™, a pure molecule whose safety has been widely demonstrated within the recommended use conditions and which erases dark spots from the face and the hands.

Radianskin™ has an innovative mechanism blocking the release of melanin by the melanocytes, an alternative to the inhibition of tyrosinase, pathway already broadly investigated.

As well as unifying the complexion, Radianskin™ prevents the cell damage caused by UVB radiation and reduces the release of inflammatory cytokines. Therefore Radianskin™ helps slow down the premature photoaging of the skin.

Radianskin™ shows an age-spots reduction efficacy on a panel of Asian women on face and on a panel of Causasian women on the hands.

Unlike most of the active ingredients inhibiting tyrosinase, which must be incorporated at neutral pH, Radianskin™ places no limitations on cosmetic formulations. In particular, Radianskin™ has no impact on the color of formulations.

Cosmetic use

Anti-aging skin care, radiance restoring treatment.
Anti-age spot serum.
Anti-aging and loss of radiance prevention treatment.
Skincare for men.
Decolleté.

Cosmetic properties

Safe and effective against age spots:
- reduction in melanogenesis by inhibiting melanin release,
- photo-protective effect,
- well tolerated by the skin.

Radianskin™ is the new anti-age spot active ingredient developed by Beauty Creations.

In vitro studies

Radianskin™ safely reduces melanogenesis with greater *in vitro* efficacy than leading products

Our aim

Evaluate the ability of Radianskin™ to reduce melanogenesis on B16 melanocytes in cell culture, in comparison with market leading skin-brightening products.

Results

From very low concentrations, Radianskin™ reduces melanogenesis by up to 86% with a dose-dependent effect and no cytotoxicity (fig. 1).

Conclusion

Radianskin™ shows a greater depigmenting effect than ascorbyl glucoside, kojic acid and arbutin, and equivalent efficacy to hydroquinone without cytotoxicity (fig. 2).

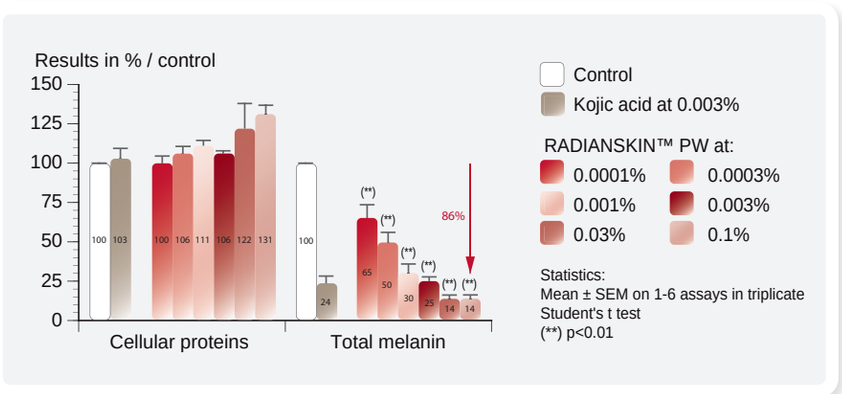


Fig. 1 – Dose effect of Radianskin™ on melanogenesis versus untreated control and 0.003% kojic acid on B16 melanocytes.

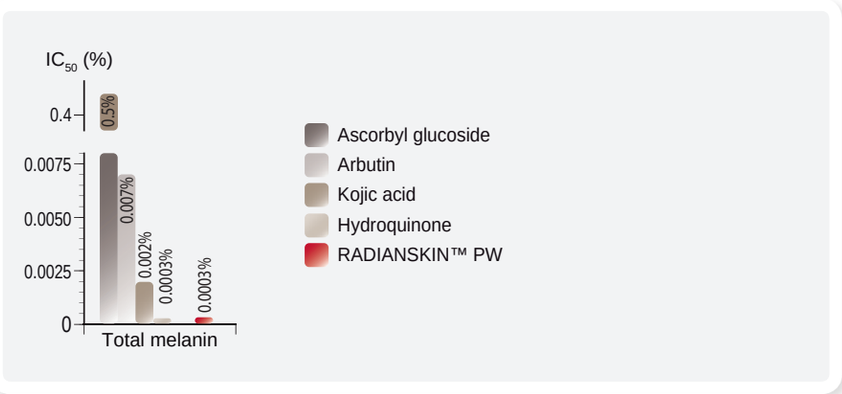


Fig. 2 – IC_{50}* of melanogenesis in B16 melanocytes culture with Radianskin™ in comparison with market leading skin-lightening products.

IC_{50} : Concentration to reach 50% inhibition of total melanin production by melanocytes

In vitro studies

Radianskin™ acts without inhibiting the tyrosinase enzyme

Our aim

Demonstrate the specific action of Radianskin™ on melanin release by the melanocytes.

Results

Radianskin™ acts on melanogenesis by inhibiting the release of melanin by the melanocytes (fig. 3).

Data on anti-tyrosinase not shown and available upon request.

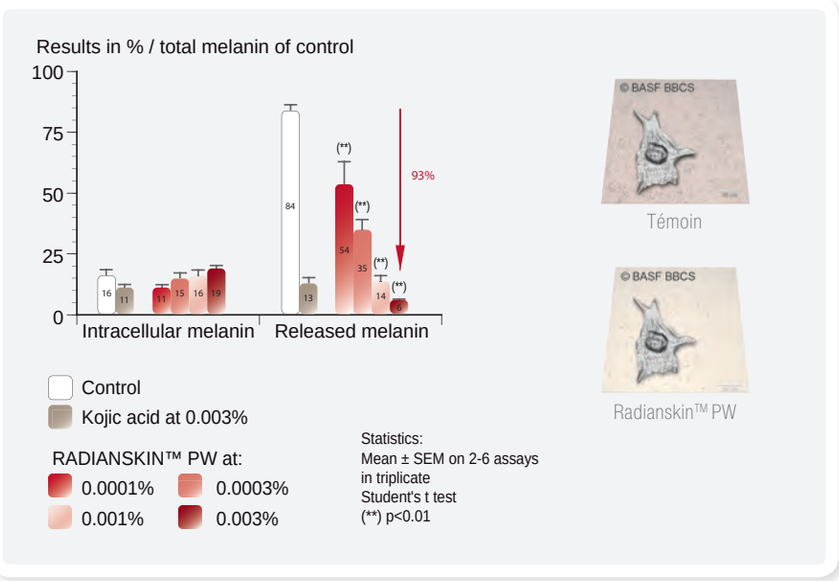


Fig. 3 – Dose effect of Radianskin™ on quantities of intracellular and released melanin.

Conclusion

Radianskin™ reduces melanogenesis by up to 93% with a dose-dependent effect and greater efficacy than most market leading skin-lightening products through an innovative mechanism inhibiting the release of melanin.

In vitro studies

Radianskin™ protects the keratinocytes from the damage caused by UVB

Our aim

Evaluate the ability of Radianskin™ to protect the keratinocytes *in vitro* after exposure to a cytotoxic and pro-inflammatory dose of UVB (30 mJ/cm²).

Results

From 0.01%, Radianskin™ increases cell viability by 89% (fig. 4).

From 0.01%, Radianskin™ reduces the release of the PGE2 inflammatory cytokines caused by exposure to UVB by 34% (fig. 5).

Conclusion

Radianskin™ demonstrates an efficacy on damages induced by a cytotoxic dose of UVB radiations applied on human keratinocytes (cell viability maintenance and inflammatory cytokines release reduction).

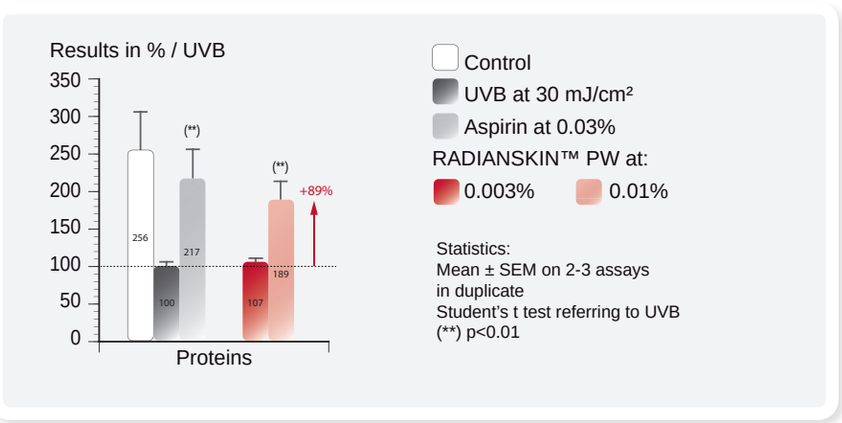


Fig. 4 – Measurement of cell viability (protein dosage).

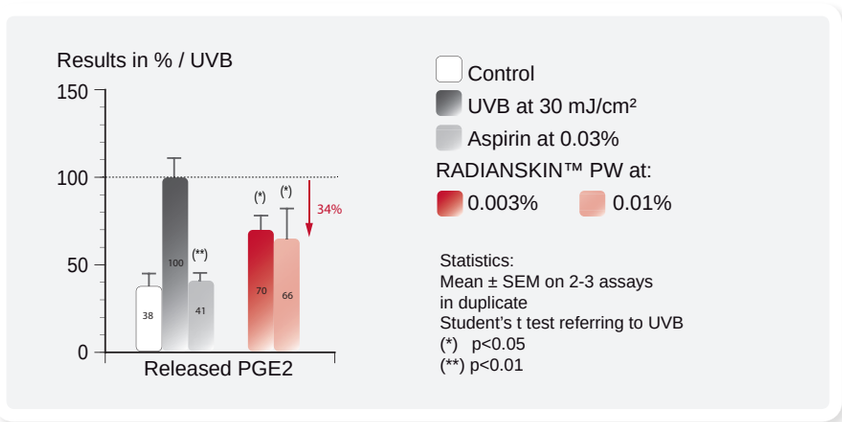


Fig. 5 – Measurement of the PGE2 released in the cell culture medium (supernatant).

Radianskin™ reduces melanogenesis *in vitro* through inhibition of melanin release with greater efficacy than leading products while contributes to prevents UVB radiation damages for an optimum depigmenting effect.

In vivo studies on face

Within 14 days, Radianskin™ reduces age spots and unifies the complexion with similar efficacy to 2% kojic acid

Our aim

Evaluate the ability of Radianskin™ to reduce age spots and unify the complexion.

Test conducted on a panel of 25 Asian women presenting age spots after 8 weeks of twice-daily use of 1% Radianskin™ and 2% kojic acid (benchmark) on each half of the face.

Results

The lightening effect of Radianskin™ is shown from 14 days in a significant and proportional increase in the parameters (L* and ITA°) vs before treatment. This efficacy is similar to that of the leading product (2% kojic acid) (fig. 6 - 7).

The efficacy of Radianskin™ on complexion evenness is shown after 56 days with up to 13.4% increase in the difference in the ITA° parameter between areas with and without age spots (fig. 8).

Conclusion

From 14 days, Radianskin™ reduces age spots and the contrast between age spots and spotless areas, giving visibly even and brighter skin.

Instrumental

Measurement of an area with and without age spots by Chromameter™ 400

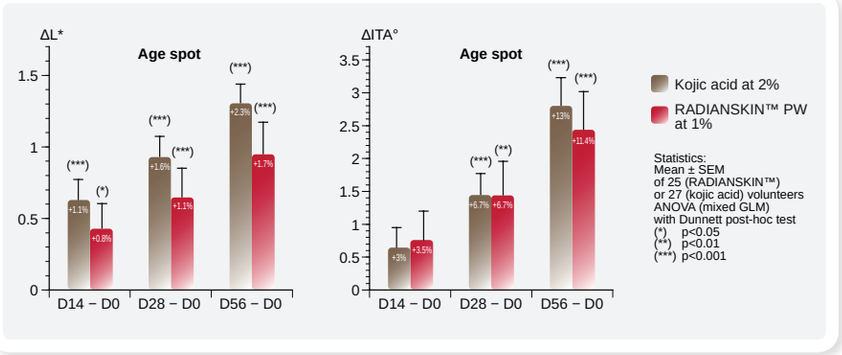


Fig. 6 – ΔL* and ΔITA° with percentage of improvement versus (D0).

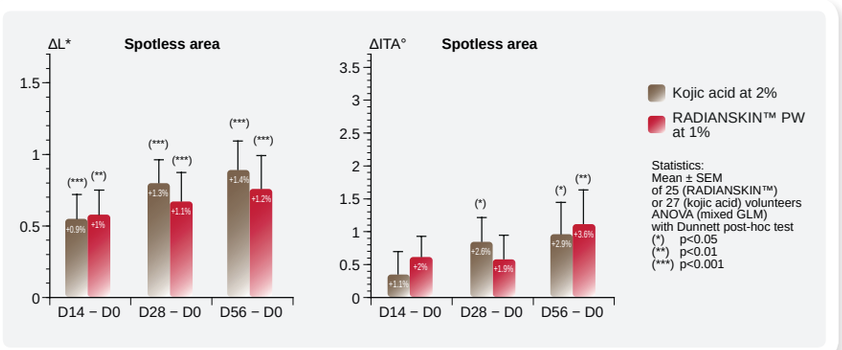


Fig. 7 – ΔL* and ΔITA° with percentage of improvement in an area with no age spots versus (D0).

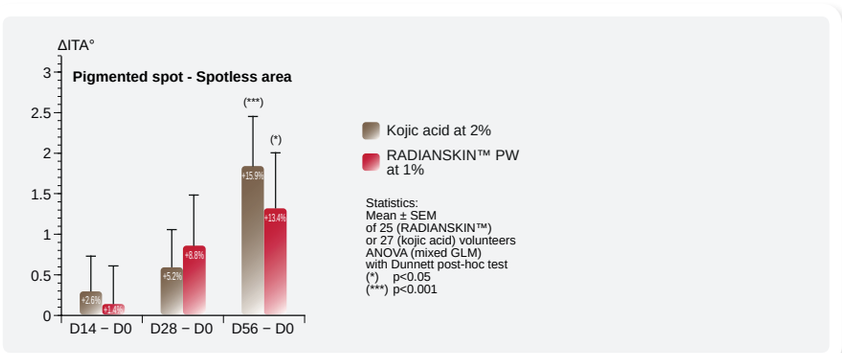


Fig. 8 – ΔITA° with percentage of improvement between areas with and without age spots versus (D0).

Clinical evaluation

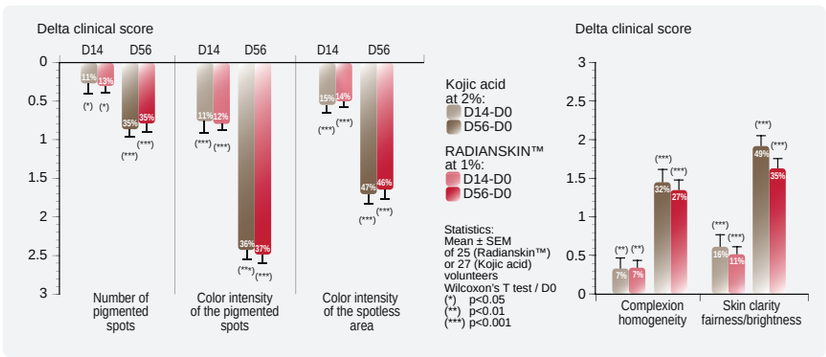


Fig. 9 – Delta clinical score with percentage of improvement versus (D0).

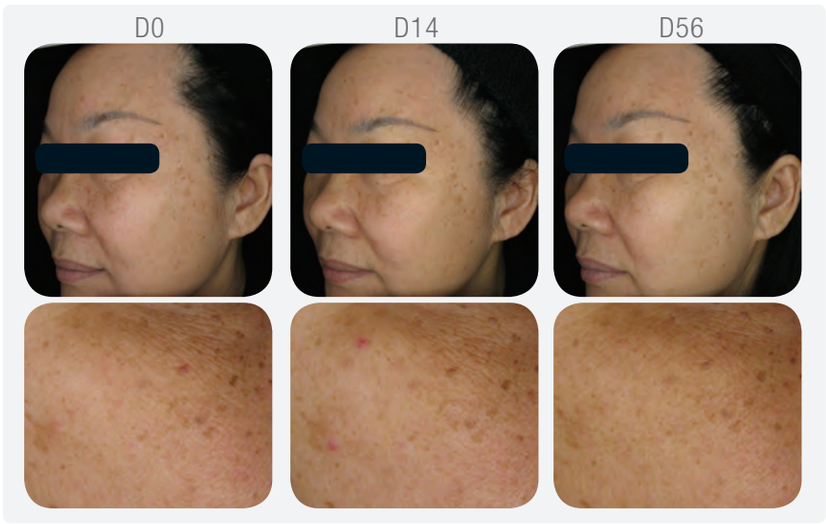


Fig. 10 – Photographs illustrating the complexion evenness and anti-age spot efficacy of Radianskin™ 1%.

Results

Clinical evaluation by a dermatologist demonstrated the increasing efficacy of Radianskin™ on reducing age spots and improving the evenness of the complexion.

In 14 days, Radianskin™ improves all the measured parameters; up to 46% improvement is obtained versus (D0) after 56 days (fig. 9 - 10).

Self-assessment by the panelists

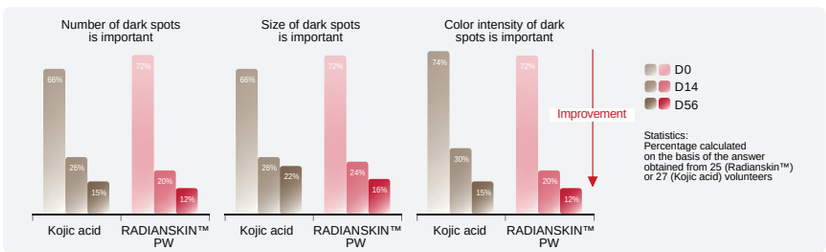


Fig. 11 – Percentage of volunteers who agree and strongly agree with the evaluation criteria (number, size and color of the age spots).

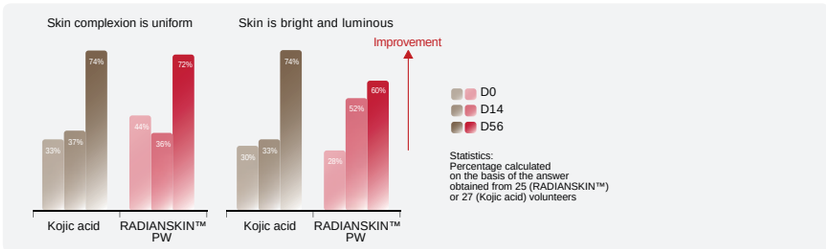


Fig. 12 – Percentage of volunteers who agree and strongly agree with the evaluation criteria (uniformity of the complexion, bright and radiant skin).

Conclusion

Demonstrated by a clinical study and self-assessment by the volunteers, Radianskin™ reduces the appearance of age spots and increases the evenness of the complexion in 14 days for visibly brighter and more radiant skin.

Radianskin™: skin is visibly more even and more radiant.

In vivo studies on hand

Within 14 days, Radianskin™ visibly reduces age spots on the hands

Our aim

To evaluate the ability of Radianskin™ to reduce the appearance of age spots on the hands.

Test conducted on a panel of 20 Caucasian women presenting age spots on the hands.

Evaluation done after until 8 weeks of twice-daily use.

Results

The efficacy of Radianskin™ is shown in the reduction in age spots in 14 days. The improvement represents 2.4% for the parameter L* and 20% for ITA° after 56 days of use (fig. 13).

Instrumental

Measurement of age spots by Chromameter™ 400

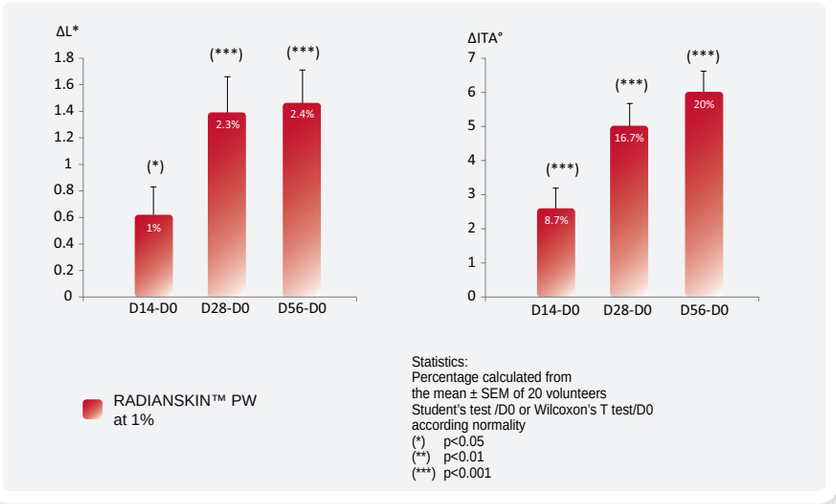


Fig. 13 – ΔL* and ΔITA° with percentage of improvement in age spots on the hand versus D0.

Image analysis

Grey level analysis of age spots on hands

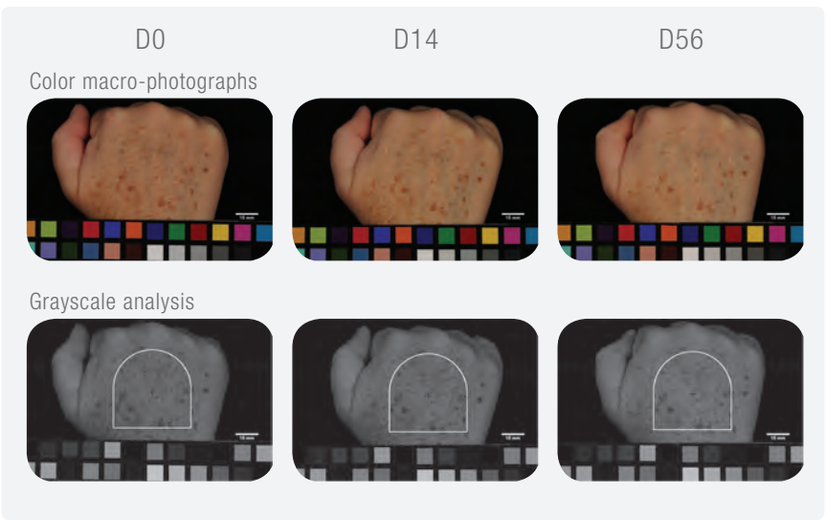


Fig. 14 – Macro-photographs illustrating the anti-age spot efficacy of Radianskin™ 1%.

Results

Significant improvement in grey level scale (0 meaning black) was observed in areas with and without age spots.

The degree of improvement was, however, greater in areas with age spots, indicating a more even skin color in pigmented areas after 56 days of using Radianskin™ 1% (fig. 14 - 15).

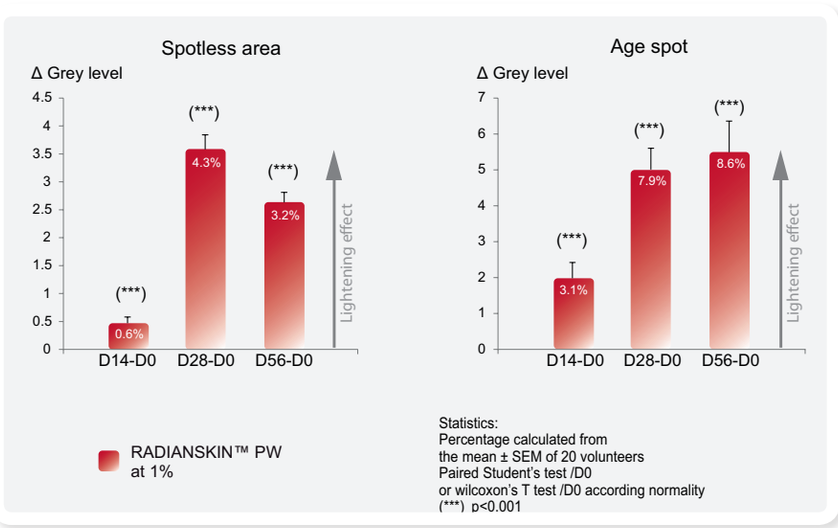


Fig. 15 – Delta grey level with percentage of improvement between age spots and spotless areas versus D0 after application of Radianskin™ 1%.

Measurements taken by colorimetric analysis of macro-photographs of the hand

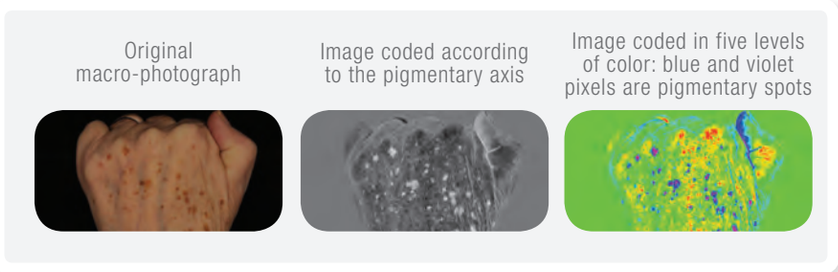


Fig. 16 – Analyzed images used to calculate the number and surface of age spots (blue and violet pigment pixelation).

Results

Up to 29% improvement in the number and the surface of the age spots was observed from 14 days of use of Radianskin™ 1%; this improvement increased to up to 55% after 56 days (fig. 16 - 17).

Conclusion

From 14 days of use, Radianskin™ significantly reduces the appearance of age spots on the hands.

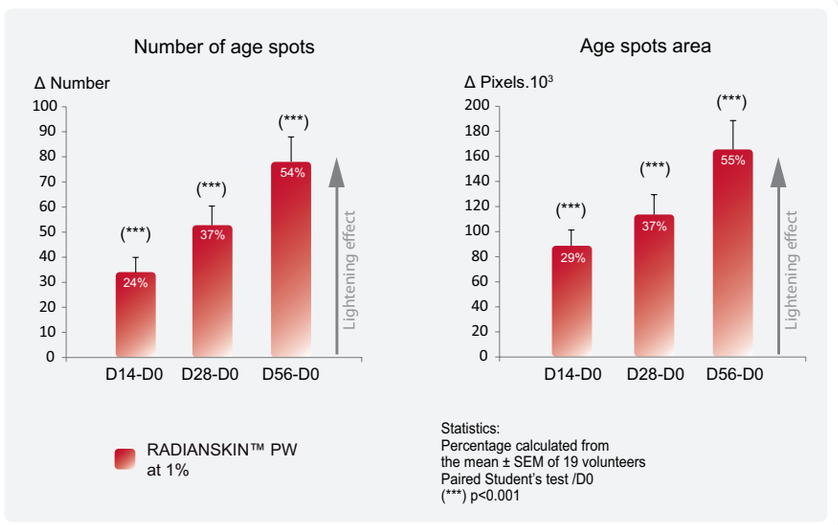
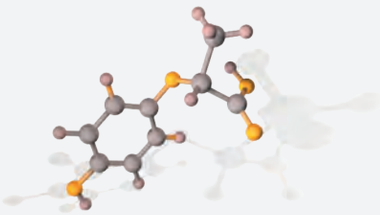


Fig. 17 – Delta number and area of age spots on the hands with percentage of improvement versus (D0).

With Radianskin™, the hands are rejuvenated.

Radianskin™

Origin / Description



(R)-2-(4-hydroxyphenoxy)propionic acid
Molecular Weight: 182.2 Da
Synthetic pure molecule (≥ 98%)

Summary file

Radianskin™	Reference PW LS 9918
Regulatory data	INCI: Hydroxyphenoxy Propionic Acid China: Hydroxyphenoxy Propionic Acid is not featured on any list of cosmetics ingredients CAS# 94050-90-5 EINECS/ELINCS# 407-960-3
Appearance	White to beige powder
Formulation data	Concentration of use: 1% Solubility: soluble in water Incorporation method: Radianskin™ can be incorporated in the aqueous phase of cosmetic product below 80°C or at room temperature for cold processing Radianskin™ is compatible with aluminum salts, AHAs, vitamin C, sunscreens, TiO_2, etc... Formulation data sheet available upon request
Storage	In its original packaging and protected from moisture, at 10 - 30°C
Shelf life	24 months
Patent family	EP2117498B1 (DE, FR, IT, GB, ES), US8247447B2 Under examination in JP, IN, PH and KR

Commercial sample of Radianskin™ and two examples in formulation (a lotion and a transparent serum) with Radianskin™ 1%.

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The Chemical Company

Credits
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