

In-vitro study:

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In Spring 2004, the team of Dr Odile Damour, HÔPITAL ÉDOUARD HERRIOT in Lyon, France, conducted a detailed study aimed at examining the effect of Imedeen Prime Renewal active ingredients on skin cells and skin structure using 3-D in-vitro reconstructed skin equivalents (SE).

METHOD

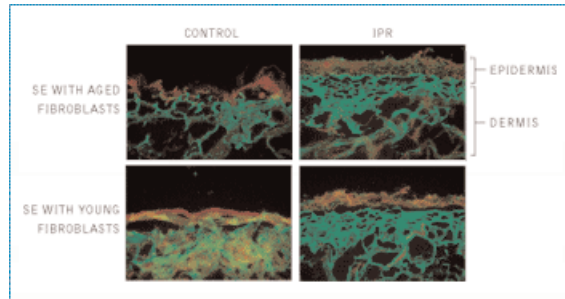
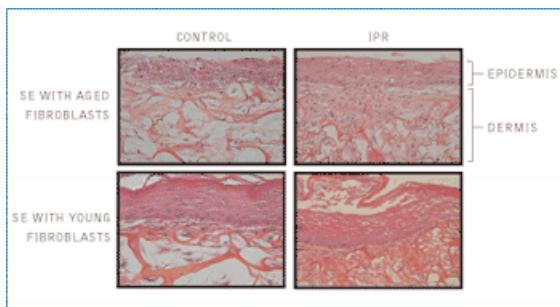
SE composed of all vital skin layers (dermis, epidermis and stratum corneum) were generated in laboratory. Skin fibroblasts used for generation of SE were obtained from young and aged female volunteers. Forty-eight SE were treated with Imedeen Prime Renewal active ingredients. A control group of another 48 SE was cultured in parallel without treatment.

Collagen type I, fibrillin and elastin are proteins that are important for formation of dermis. These proteins are first synthesized by dermal cell fibroblasts and then released from the cells and arranged (deposited) in dermal extracellular matrix.

RESULTS

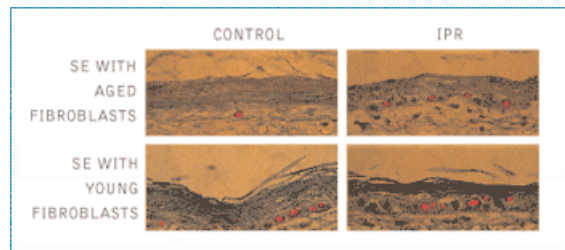
Overall effect on dermis

Examination of the SE organisation showed that Imedeen Prime Renewal increases the density of the dermal structure in skin equivalents (see Fig. 1).



Overall effect on epidermis

Examination of the SE organisation showed that Imedeen Prime Renewal improved the structure of epidermis in skin equivalents. The effect was more pronounced in skin equivalent with aged fibroblasts. The epidermis in Imedeen Prime Renewal treated equivalent consisted of a higher number of well organized layers of keratinocytes, as compared to untreated samples.



CONCLUSION

The results proved conclusively that Imedeen Prime Renewal treatment had multiple noticeable effects on epidermis and dermis of cultured skin equivalent. The effect was more prominent in skin equivalents prepared from aged fibroblasts as compared to skin equivalents with fibroblasts obtained from young skin. The treatment seemed to improve the age related changes in dermis and epidermis in the direction of what was observed in skin equivalent prepared from young fibroblasts. The most important effects were increased synthesis and deposition of collagen type 1 and fibrillin in dermis, as well as stimulation of keratinocytes growth and maintenance of well structured epidermis.