

endoret® (prgf®)

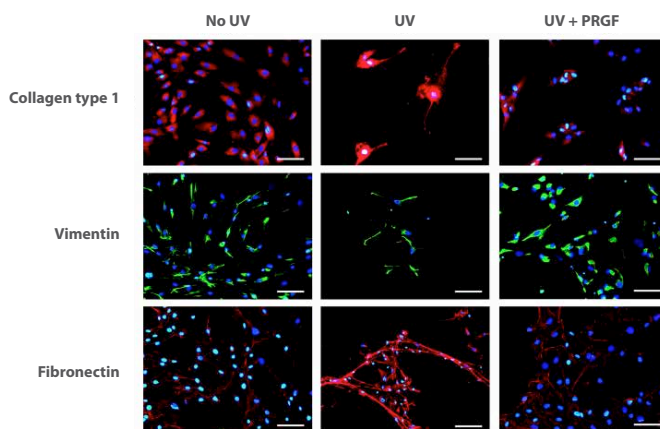
Endogenous Regenerative Technology

EFFICACY IN PROTECTION AND PREVENTION FROM SKIN PHOTODAMAGE

Endoret (PRGF®) protects and prevents damage from UV radiation in skin fibroblast.

ENDORET (PRGF®) RESTORES DERMAL EXTRACELULAR MATRIX ESTRUCTURE.

FIG 1. The tridimensional arrangement of extracellular matrix proteins such as Collagen type I, Fibronectin and Vimentin, involved in structural stability and homeostasis, suffered severe damage after UVB irradiation. In contrast, when dermal fibroblasts were treated with **PRGF**, even under the same irradiation dose, their morphological features kept similar to non-irradiated ones.



FIBROBLAST SURVIVAL IS ENHANCED 3.4 TIMES WHEN TREATED WITH ENDORET (PRGF®) AND EXPOSED TO UV RADIATION

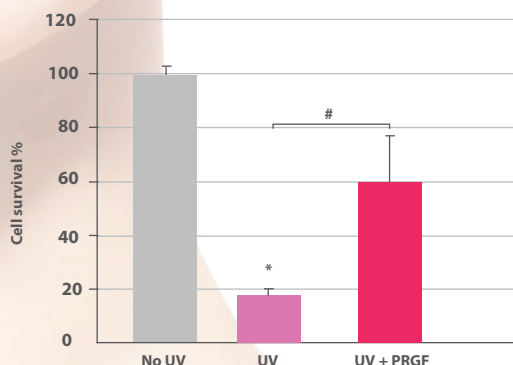


FIG 2. Significant improvement was observed for Protection treatment (before UV radiation) and Regeneration treatment (after UV radiation). Fibroblast survival reached 58%±18 when treated with Endoret PRGF. However, without PRGF treatment, viability decreased significantly by means of 17%±2.

ABSTRACT

Anitua E, Pino A, Orive G. Curr Pharm Biotechnol.

Efficacy in protection and prevention from skin photodamage.

BACKGROUND

Optimal skin repair has been a desired goal for many researchers. Recently, plasma rich in growth factors (PRGF) has gained importance in dermatology proving it is beneficial effects in wound healing and cutaneous regeneration.

OBJECTIVE

The anti-fibrotic, pro-contractile and photo-protective effect evaluation of PRGF on dermal fibroblasts and 3D skin models.

METHOD

The effect against TGF β 1 induced myofibroblast differentiation was tested. Cell contractile activity over collagen gel matrices was analyzed and the effect against UV derived photo-oxidative stress was assessed. The effectiveness of PRGF obtained from young aged and middle aged donors was compared. Furthermore, 3D organotypic skin explants were used as human skin models with the aim of analyzing ex vivo cutaneous preventive and regenerative photo-protection after UV exposure.

RESULTS

TGF β 1 induced myofibroblast levels decreased significantly after treatment with PRGF while the contractile activity increased compared to the control group. After UV irradiation, cell survival was promoted while apoptotic and ROS levels were noticeably reduced. Photo-exposed 3D explants showed higher levels of metabolic activity and lower levels of necrosis, cell damage, irritation and ROS formation when treated with PRGF. The histological integrity and connective tissue fibers showed lower signals of photodamage among PRGF injected skin models. No significant differences for the assessed biological outcomes were observed when PRGF obtained from young aged and middle aged donors were compared.

CONCLUSION

These findings suggest that this autologous approach might be useful for antifibrotic wound healing and provide an effective protection against sun derived photo-oxidative stress regardless the age of the patient.