EFFICACY OF HAIR COMPLEX (GROWTH FACTOR SOLUTION) IN CONJUNCTION WITH MICRONEEDING THERAPY

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Abstract:

BACKGROUND: Growth factors have been observed to be influential to the development and growth of hair follicles[1]. Various growth factors and cytokines, particularly member of fibroblast growth factor family, possess the potential to stimulate hair cycle processes within the dermis to decrease[2]. The GF Hair Complex that contains a proprietary formulation of growth factors designed to diminish the signs of aging and bring back the healthy cycle of hair was used for this study. We hypothesized that GF Hair Complex improves overall growth of hair and scalp condition when used with a clinical modality.

METHODS AND RESULTS: GF Hair Complex used in conjunction with SkinStamp VMT resulted in 67% ($p<0.005$) improvement in hair growth on the 10 subjects with Norwood scale 3-6.

CONCLUSIONS: These findings demonstrate GF Hair Complex combined with SkinStamp VMP results in improvement in appearance of hair growth.

INTRODUCTION:

Recent studies have shown the beneficial effects of growth factors on hair growth[3]. Growth factors are naturally occurring proteins that stimulate cell growth, proliferation, and differentiation. They may act as signaling molecules affecting the transcriptional and translational regulation between cells. Wound healing is a complex process characterized by inflammation, proliferation of new cells, and remodeling. Company has developed GF Hair Complex that contains a proprietary formulation of growth factors and botanicals that work synergistically to accelerate the rejuvenation of scalp and recovery the healthy cycle of hair follicles.

This study has incorporated the SkinStamp Vertical Micro-Needle Therapy system to facilitate the delivery of the growth factor-rich GF Hair Complex to the follicles. The Skinstamp procedure creates micro-channels in the skin to allow improved penetration of the solution. Study shown in the figure 2 proves that the SkinStamp VMT is an effective device for the transdermal delivery of solutions. The

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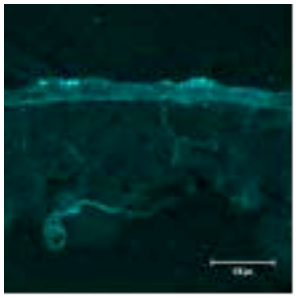
[1] Loss of vascular endothelial growth factor in human alopecia hair follicles. Goldman CK, Tsai JC, Soroceanu L, Gillespie GY. Department of Surgery, University of Alabama at Birmingham 35294-0006, USA. J Invest Dermatol. 1995 May; 105(5 Suppl):18S-20S.

[2] Keratinocyte growth factor is an important endogenous mediator of hair follicle growth, development, and differentiation. D. M. Danilenko, B. D. Ring, D. Yanagihara, W. Benson, B. Wiemann, C. O. Starnes, and G. F. Pierce. Am J Pathol. 1995 July; 147(1):145-154. PMCID: PMC1869891.

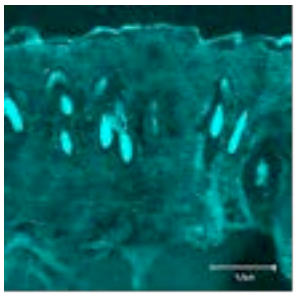
[3] Hair growth stimulated by conditioned medium of adipose-derived stem cells is enhanced by hypoxia: evidence of increased growth factor secretion. Park BS, Kim WS, Choi JS, Kim HK, Won JH, Ohkubo F, Fukuoka H. Biomed Res. 2010 Feb;31(1):27-34.

intensity of this non-ablative procedure serves to increase the penetration of the solution and the efficacy of scalp rejuvenation.

Subject	Mouse/male
Solution used	Hoechst 33342 (glowing substance)
Camera	Confocal Microscope (LSM meta 510, Carl Zeiss, Germany)



Solution applied without SkinStamp



Solution applied with SkinStamp (Magnified image)

Figure 1. Transdermal Delivery Study

MATERIALS AND METHODS:

10 subjects with Norwood scale between 3 and 6 and with age between 30 and 50 years of age were enrolled in a 12 weeks clinical study to evaluate the efficacy of GF Hair Complex combined with the SkinStamp VMP procedure. 6 subjects were Caucasian, 4 subjects were Asian. Subjects who had any medical procedure such as hair transplantation surgery prior to the start of the study were excluded. The VISIA® Complexion Analysis System (Canfield Imaging Systems) was used to analyze patients before and after treatment.

RESULTS:

Of the 10 subjects enrolled in the study, 9 subjects and one subjects left voluntarily due to reasons unrelated to the study.

Photographic Assessment:

The pictures of each subject were taken four times during 12 weeks of study. Subjects showed an approximate 67% reduction ($p<0.005$) in physician's assessment using the VISIA® images. Figure 1 shows how the photo was taken and assessed. 6 of 9 subjects showed a mild improve or improve in hair growth. 7 of 9 (77%) people showed some improve of their scalp condition.

DISCUSSION:

Hair loss has many causes, and there are still many scientific questions that remain unanswered about the physiological process of the hair growth cycle. These studies aimed to discover if growth factors applied to the scalp could slow the rate of hair loss and stimulate re-growth of Hair. The GF hair Complex used in conjunction with Skinstamp VMT, has been shown to be an effective procedure for slowing and/or preventing hair loss and stimulating hair re-growth in certain individuals. Additional studies will be conducted to further determine which individual are better candidates than others.

More Before & After Pictures from the trial: