

AC DermaPeptide Toning PF Efficacy Data

Code: 20455PF
INCI Name: Water & Yeast Extract
CAS #: 7732-18-5 & 8013-01-2
EINECS #: 231-791-2 & 232-387-9

Type of Study	Results
<p>Assessment of Collagen Production</p>	<p>The results implicate that AC DermaPeptide Toning PF may be efficacious in increasing the expression of mRNA that codes for collagen IV and VII thereby increasing the production of both collagen IV and VII. The increase in collagen production may also lead to improvement in the dermal epidermal junction.</p>
<p>Assessment of Epithelial Characteristics</p>	<p>The depth and volume of wrinkles directly correlates with their degree of visibility, the deeper the wrinkles are or the larger the volume the more visible the wrinkles become. When comparing the laser profilometry results of the biological control to the variable, the data for AC DermaPeptide Toning PF reveals that the depth, volume and visual impact of the wrinkles decreased over the 6-hour period better than the biological control. The graph indicates that AC DermaPeptide Toning PF may decrease the appearance of fine lines and wrinkles when compared to the results for the biological control.</p>
<p>In-vivo Toning Analysis</p>	<p>The results indicate that AC Dermapeptide Toning PF reduces epidermal recoil therefore exhibiting a tightening effect on the skin. Epidermal fatigue was also reduced which indicates that perhaps AC Dermapeptide Toning PF may improve the overall integrity of the epidermis. The combined improvement in tightness and the decrease in fatigue indicate that AC Dermapeptide Toning PF improves skin tone.</p>

AC DermaPeptide Toning PF Assessment of Collagen Production

Code: 20455PF
INCI Name: Water & Yeast Extract
Suggested use levels: 2.0-5.0%

Abstract

An *in-vitro* study was conducted to determine if **AC DermaPeptide Toning PF** is capable of increasing the reate of collagen IV and collagen VII production. Collagen IV serves as a protein in the epidermal scaffolding matrix as well as a component of the dermal epidermal junction (DEJ). Collagen VII is predominantely localized in the epithelium however it forms fibrils and filamints at the DEJ. The DEJ is the point in which the epidermis and dermis bind.

Methods & Materials

Confluent human fibroblasts were incubated with 2% **AC DermaPeptide Toning PF** in the presence of 5% CO₂ for a period of 72 hours. RNA was then extracted from the frobroblasts and transcribed to produce complementary DNA via reverse transcription. PCR analysis was then performed to isolate the segments of DNA present that code for collagen IV and collagen VII production. The DNA expression for fibroblasts treated with 2% **AC DermaPeptide Toning PF** were compared to those of fibroblasts treated with TGF-b1 and b-actin mRNA as the placebo.

The intensity of the bands fromed an agarose via PCR was quantified using a Bio-Profil system, BIO-1D software (Vilber Lourmat, France). The intensity of the bands for cells treated with **AC DermaPeptide Toning PF** were compared to those of cells treated with TGF-b1 and b-actin. The following ratios were used to discern the percent difference in mRNA production.

Variable Intensity (VI)=PCR band intensity for Variable/PCR band for b-actin

Placebo Intensity (PI)=PCR band intensity for placebo/PCR band for b-actin

% Difference=VI/PI*100

Results

Collagen IV mRNA Expression

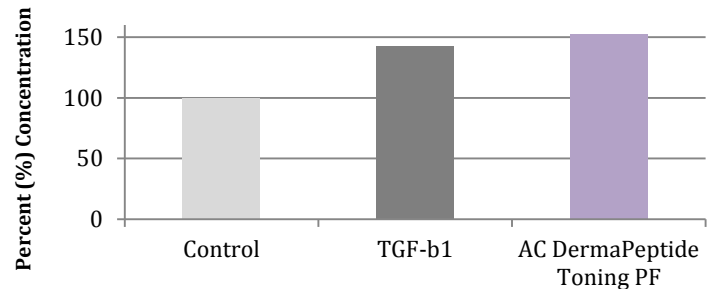


Figure 1. Comparison of fibroblasts treated with **AC DermaPeptide Toning PF** & TGF-b1.

Collagen VII mRNA Expression

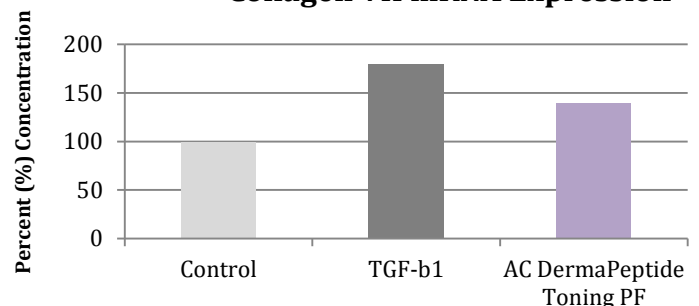


Figure 2. Comparison of fibroblasts treated with **AC DermaPeptide Toning PF** & TGF-b1.

Discussion

The results implicate that **AC DermaPeptide Toning PF** may be efficacious in increasing the expression of mRNA that codes for collagen IV and VII thereby increasing the production of both collagen IV and VII. The increase in collagen production may also lead to improvement in the dermal epidermal junction.

AC DermaPeptide Toning PF Assessment of Epithelial Characteristics

Code: 20455PF
INCI Name: Water & Yeast Extract
Suggested use levels: 2.0-5.0%

Abstract

An *in-vivo* study was conducted over a period of 28 days to evaluate the smoothing effect on the epidermis while concurrently decreasing the depth and volume of wrinkles to provide a decrease in the appearance of fine line and wrinkles. 6 F subjects between the ages of 32 and 58 participated in the study.

Methods & Materials

Subjects abstained from using any products on their face prior to the trial. Two areas along the forehead were selected for the trial; area 1 was treated with the variable while area 2 was left untreated for the biological control. The variable material consisted of a non-aqueous emulsion with 2% **AC DermaPeptide Toning PF** and it was applied to area one of the forehead. Following immediate application of the variables, impressions of the test areas were made using silicone molds. Impressions were also taken at post application times of 1 hour and 6 hours. Laser profilometry with a three dimensional confocal surface measurement system from NanoFocus was used on the molds to quantify the effects of **AC DermaPeptide Toning PF**. The results were compared to the results for the biological control. The molds were kept at a relative humidity between 40 and 60% and at room temperature of approximately 22 degrees Celsius.

Factors that are vital for determining wrinkle improvement include wrinkle depth, volume, complexity and the overall visual impact. The comparisons made between the silicone molds from t=0 to t=1 to t=6 included measurements of wrinkle depths, volume, smoothing and visual impact (complexity). Profilometry was used to determine epithelial changes and the differences between changes in depth, volume, complexity and smoothness.

Results

**Wrinkle Reduction with 2% AC
DermaPeptide Toning PF**

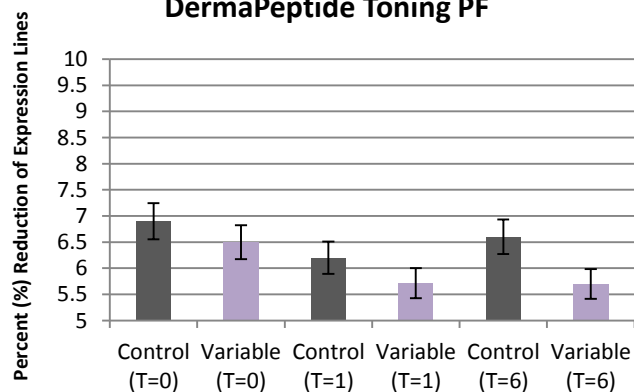


Figure 1. *in-vivo* anti-wrinkle results.

Discussion

The depth and volume of wrinkles directly correlates with their degree of visibility, the deeper the wrinkles are or the larger the volume the more visible the wrinkles become. When comparing the laser profilometry results of the biological control to the variable, the data for **AC DermaPeptide Toning PF** reveals that the depth, volume and visual impact of the wrinkles decreased over the 6-hour period better than the biological control. The graph indicates that **AC DermaPeptide Toning PF** may decrease the appearance of fine lines and wrinkles when compared to the results for the biological control.



AC DermaPeptide Toning PF *In-vivo* Toning Analysis

info@activeconceptsllc.com • Phone: +1-704-276-7100 • Fax: +1-704-276-7101

Abstract:

The efficacy of **AC Dermapeptide Toning PF** was determined by measuring changes in epidermal characteristics such as elasticity, fatigue and tone before and after a 28 day treatment with a Carbopol gel containing 5% **AC Dermapeptide Toning PF**.

Materials and Methods:

A six subject panel of women between the ages of 32 and 58 was asked to apply a mixture containing 5% **AC Dermapeptide Toning PF** to their forearms twice daily for 28 days. Subjects abstained from using products on the test site prior to analysis. The SEM 575 Cutometer[®] was used to non-invasively quantify modifications in epidermal elasticity via suction. The process began by placing the suction probe in contact with the skin for a period of 5 seconds, this was then repeated 5 times consecutively. Sensors at the tip of the probe measured the amount of epidermis drawn into the probe to determine the structural integrity of the epidermis e.g. tensile property. All testing was performed in conjunction with a placebo.

Recorded values pertinent in determining the efficacy of **AC Dermapeptide Toning PF** include: the initial contortion (IC), delayed contortion (DC), tensility (T=IC + DC), final tensility (T'), epidermal recoil (ER), secondary recoil (mean of cutometer measurements taken 5 times consecutively)(ER').

The following formulas were used to analyze results:

Toning:

$$\% \Delta T' = (\text{Day 28 } T' / \text{Day 0 } T') * 100$$

Fatigue:

$$\% \Delta ER' = (\text{Day 28 } ER' / \text{Day 0 } ER') * 100$$

Elasticity:

$$\% \Delta ER = (\text{Day 28 } ER / \text{Day 0 } ER) * 100$$

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AC DermaPeptide Toning PF *In-vivo* Toning Analysis

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Results:

Figure 1. Fatigue Assessment

AC Dermapeptide Toning PF				Placebo		
Volunteer	Day 0	Day 28	change	Day 0	Day 28	change
1	0.063	0.043	-0.020	0.049	0.095	0.046
2	0.037	0.035	-0.002	0.045	0.093	0.048
3	0.035	0.048	0.013	0.047	0.125	0.078
4	0.047	0.046	-0.001	0.058	0.103	0.045
5	0.059	0.066	0.007	0.067	0.105	0.038
6	0.050	0.043	-0.007	0.072	0.132	0.06
Mean	0.049	0.047	-0.002	0.056	0.109	0.053

Figure 2. Elasticity Assessment

AC Dermapeptide Toning PF				Placebo		
Volunteer	Day 0	Day 28	change	Day 0	Day 28	change
1	1.023	0.971	-0.052	0.968	0.97	0.002
2	0.851	0.813	-0.038	0.868	0.953	0.085
3	0.842	0.843	0.001	0.793	0.796	0.003
4	1.12	0.989	-0.131	0.876	0.851	-0.025
5	0.937	0.857	-0.08	0.923	0.928	0.005
6	0.827	0.768	-0.059	1.06	1.032	-0.028
mean	0.933	0.874	-0.060	0.915	0.922	0.007

Figure 3. Toning Assessment

AC Dermapeptide Toning PF				Placebo		
Volunteer	Day 0	Day 28	change	Day 0	Day 28	change
1	0.395	0.387	-0.008	0.425	0.428	0.003
2	0.405	0.357	-0.048	0.369	0.374	0.005
3	0.378	0.362	-0.016	0.353	0.352	-0.001
4	0.342	0.327	-0.015	0.408	0.413	0.005
5	0.356	0.358	0.002	0.321	0.319	-0.002
6	0.348	0.337	-0.011	0.373	0.372	-0.001
mean	0.371	0.355	-0.016	0.375	0.376	0.002

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Efficacy of AC DermaPeptide Toning PF

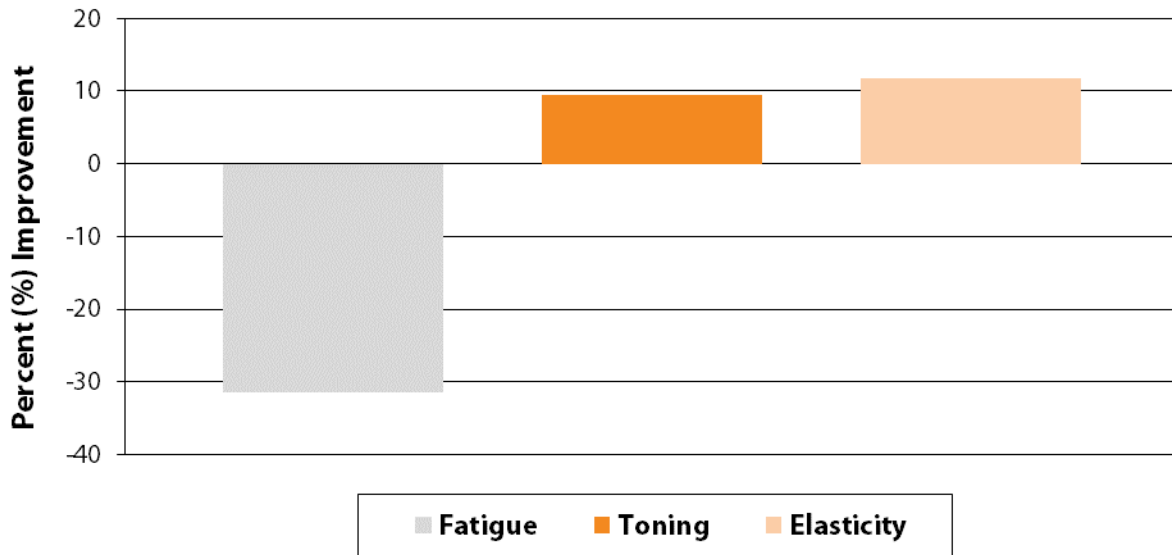


Figure 4. Relationship between improvement in tightness and decline in fatigue indicate a correlation between **AC Dermapeptide Toning PF** and improved skin tone.

Discussion:

It is understood that firm skin is elastic and that there is direct relationship between elasticity and recoil. As elasticity improves so does recoil and the values for epidermal recoil decrease as skin becomes toned. The integrity of the epidermis effects how it reacts under stressful conditions such as fatigue. Observing how the epidermis responds under stress may be a good indicator of the epidermal integrity. One may deduce that an improved tensor effect may be related to an improvement in epidermal integrity and a reduction in fatigue. In order to detect fatigue the cutometer was used for 5 successive trials to determine changes in elastic recoil.

The results indicate that **AC Dermapeptide Toning PF** reduces epidermal recoil therefore exhibiting a tightening effect on the skin. Epidermal fatigue was also reduced which indicates that perhaps **AC Dermapeptide Toning PF** may improve the overall integrity of the epidermis. The combined improvement in tightness and the decrease in fatigue indicate that **AC Dermapeptide Toning PF** improves skin tone.

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