

AC DermaPeptide Toning PF



Yeast Derived
Nourishing Natural
Promotes Collagen Production
Tones Rejuvenating

BACKGROUND

Communication is key. How often have we heard this phrase used in reference to our personal or work relationships? Yet one would rarely think to apply such a phrase to our skin. However, effective communication among the various cells of our body is vital for our survival and also dramatically affects our appearance.

The epidermis is the outer layer of our skin. Underneath the 5 layers of the epidermis is the dermis, which provides oxygen and nutrients necessary for maintaining the epidermis. Anatomically, the site at which both the dermis and the epidermis meet is referred to as the dermal epidermal junction (DEJ), and it consists of an area approximately 100 nm thick. The DEJ integrity is vital for the communication that occurs between the dermis and the epidermis, playing a role in numerous processes including cellular differentiation, migration, proliferation and repair. The DEJ is also involved in immune system responses such as the inflammatory response mechanism, which is triggered via chemical signals relayed across the dermal epidermal junction. By aiding and improving the skin's DEJ the positive effects could be endless.

SCIENCE

AC DermaPeptide Toning PF is intended to improve the integrity of the DEJ by increasing the synthesis of its components. This improves the overall appearance of the complexion by increasing tone and elasticity therefore decreasing the appearance of fine lines and wrinkles.

The dermal epidermal junction is predominantly constructed out of collagen types IV and VII as well as glycoproteins such as integrin $\alpha 2 \beta 1$, laminins and other proteins. Many hypothesize that the condition of the DEJ directly affect the appearance of the epidermis, theorizing its condition is responsible for wrinkle formation, elasticity and tone. Therefore, if one were to create a cosmetic to target the DEJ, it would effectively improve the various components that make up the DEJ.

Code Number: 20455PF

INCI Name: Water & Yeast Extract

INCI Status: Conforms

REACH Status: Complies

CAS Number: 7732-18-5 & 8013-01-2

EINECS Number: 231-791-2 & 232-387-9

Origin: Yeast

Processing:

GMO Free

No Ethoxylation

No Irradiation

No Sulphonation

Additives:

Natural Antimicrobial: Leuconostoc/

Radish Root Ferment Filtrate

Preservatives: None

Antioxidants: None

Other additives: None

Solvents Used: Water

Appearance: Clear to Slightly Hazy,

Yellow to Light Amber Liquid

Soluble/ Miscible: Water Soluble

Biodegradability:

87.05% Biodegradability

Microbial Count: <100 CFU/g,

No Pathogens

Suggested Use Levels: 2.0 - 5.0%

Suggested Applications:

Toning, Collagen Production,

Nourishing, Revitalizing

Benefits of **AC DermaPeptide**

Toning PF:

- Promotes Collagen Production
- Toning Benefits
- Rejuvenating

AC DermaPeptide Toning PF

AC DermaPeptide Toning PF is intended to improve the DEJ by increasing the production of collagen IV and VII as well as integrin $\alpha 2\beta 1$. We have isolated a specific peptide sequence from yeast that works to increase the production of collagens IV and VII.

BENEFITS

AC DermaPeptide Toning PF may be incorporated into lotions, creams and gels as anti-aging materials as well as other formulations designed to reduce the appearance of physical skin damage. **AC DermaPeptide Toning PF** offers the ability to promote collagen production and improve skin tone. As a water soluble, fermented yeast extract, this product can be incorporated in virtually any aqueous system yielding the ideal finished product.

EFFICACY DATA

An *in-vivo* study was conducted to evaluate the toning ability of **AC DermaPeptide Toning PF**. A 6 subject panel of women between the ages of 32 and 58 was constructed to determine the effects of **AC DermaPeptide Toning PF** on epidermal characteristics such as elasticity, tone and fatigue. The results indicated that **AC DermaPeptide Toning PF** may actually improve elasticity and tone while minimizing epidermal fatigue.

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, in this study, was utilized 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.

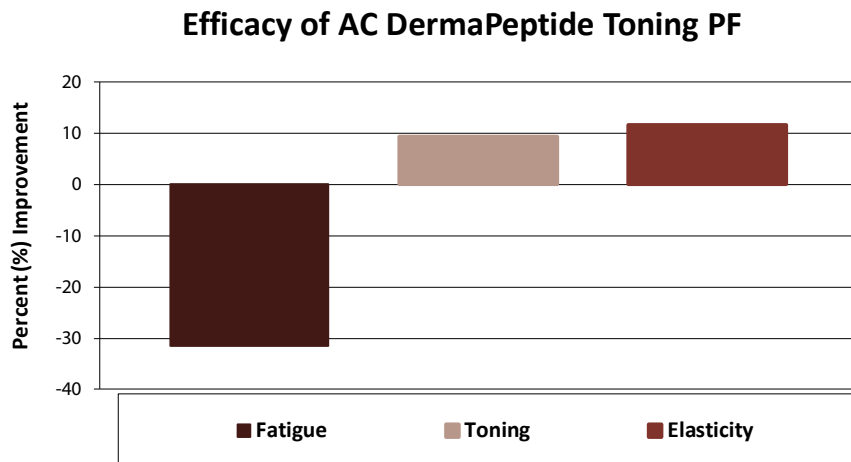


Figure 1. Relationship between improvement in tightness and decline in fatigue indicate a correlation between **AC DermaPeptide Toning PF** and improved skin tone.

AC DermaPeptide Toning PF

An *in-vitro* analysis was conducted to evaluate the ability of **AC DermaPeptide Toning PF** to increase the rate of collagen IV and collagen VII production. The results indicate that **AC DermaPeptide Toning PF** is able to increase the expression of mRNA that codes for collagen IV and VII. This increases the production of both collagen forms. This change in collagen production can lead to improvement in DEJ.

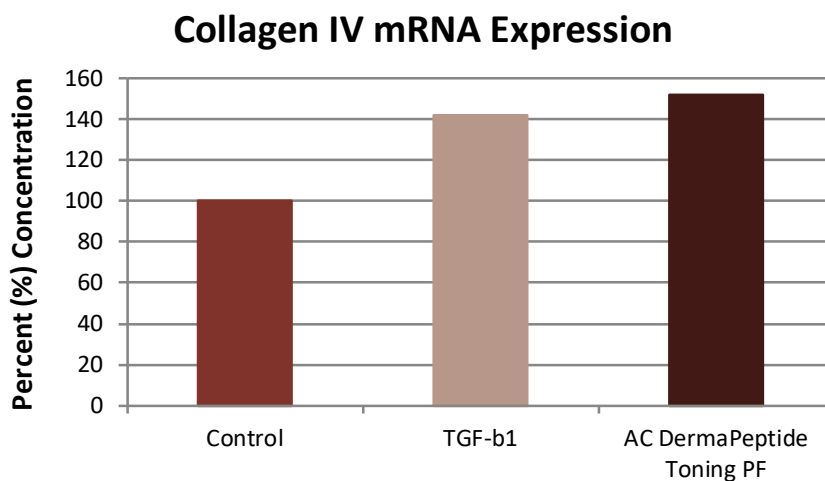


Figure 2. Increase in Collagen IV expression following application of test materials.

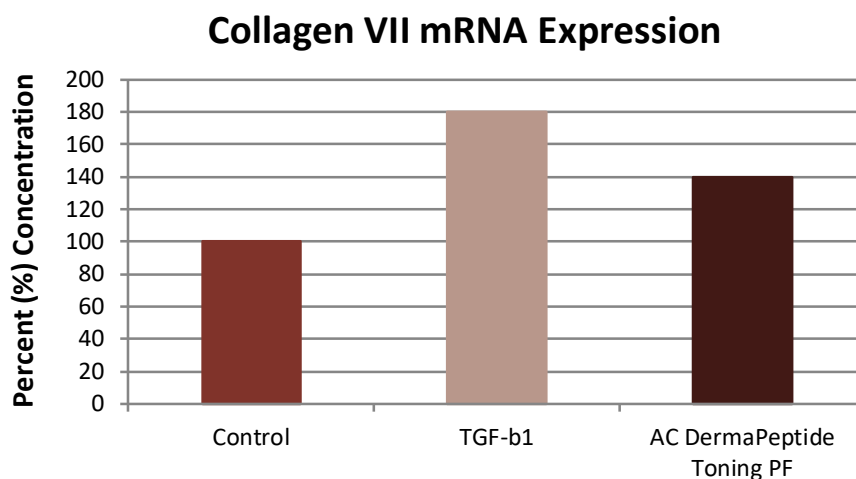


Figure 3. Increase in Collagen VII expression following the application of test materials.

References:

1. Mihara, Motoyoki., et al. "Scanning Electron Microscopy of the Epidermal Lamina Densa in Normal Human Skin." *Nature.com/jid*. Web. 30 Nov 2015.
2. Breathnach, AS. (1964): The dermo-epidermal junction. *Progress in the Biological Sciences in Relation to Dermatology - 2*: Edited by A Rook, RH Champion. Cambridge, Cambridge University Press, pp 415-425.
3. Kobayasi, T (1961): An electron microscope study on the dermo-epidermal junction. *Acta Derm Venereol (Stockh)* - 41: pp 481-491.